THE ELECTRICAL CONDUCTIVITY, DISSOCIATION, AND TEMPERATURE COEFFICIENTS OF CONDUCTIVITY FROM ZERO TO SIXTY-FIVE DEGREES OF AQUEOUS SOLUTIONS OF A NUMBER OF SALTS AND ORGANIC ACIDS

BY HARRY C. JONES

PROFESSOR OF PHYSICAL CHEMISTRY IN THE JOHNS HOPKINS UNIVERSITY

The Experimental Work by

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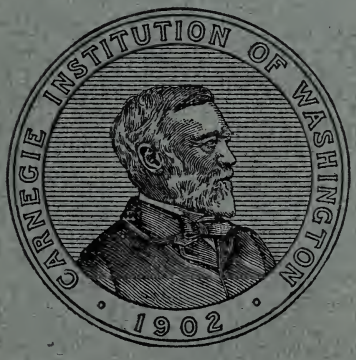
A. P. West	G. F. White	E. P. Wightman	L. G. Winston



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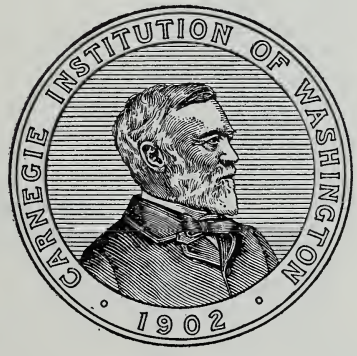

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PART I.—SALTS.

The Experimental Work in Part First was Carried Out by
Doctors Clover, Hosford, Howard, Jacobson,
Shaeffer, West, and Winston.

PREFACE.

This study of the conductivity and dissociation of electrolytes, and of the temperature coefficients of conductivity, was begun eleven years ago in connection with the solvate theory of solution, which had been proposed in this laboratory shortly before that time. Certain relations of interest, and I hope of some importance, between the temperature coefficients of conductivity and the magnitude of the hydration of the dissolved salt were pointed out.

The work, thus begun, was continued especially for the following reason: When reference was made to the literature for the conductivity of any electrolyte at any given temperature, and for the temperature coefficients of conductivity, we were frequently unable to find what was desired; or, if found, the data were often so discordant that it was impossible to decide what were the true conductivities and dissociations in question.

Since the magnitude of the dissociation of any electrolyte is fundamental to its scientific use in chemistry, it seemed desirable that such data should be made available over the range of temperature most frequently used in the laboratory. With this idea in mind the work has now been continued here until it represents more than twenty years' continuous labor for one man, about 40,000 conductivity measurements having been made. Every one of the investigators has worked from one to two years on the problem, and Doctors Springer, West, and Wightman have each continued their investigations between two and three years.

The result is, that the conductivities and dissociations of about 110 of the more common salts have been worked out from zero to sixty-five degrees, and over a range in dilution extending from about the most concentrated solution that could be used to the dilution of complete dissociation. The temperature coefficients of conductivity have been calculated in both conductivity units and percentages. Moreover, similar data have been obtained for about 90 of the more common organic acids, and their constants have been calculated by means of the Ostwald dilution law.

It is hoped that this work, which has consumed much of the best energy of my laboratory for several years past, may prove to be of some value to other investigators in the field of general or physical chemistry.

HARRY C. JONES.

INTRODUCTION.

THE METHOD.

The method of measuring the conductivity of the solutions, employed throughout this work, was essentially that of Kohlrausch. The bridge used in most of the work was the latest improved form made by Leeds and Northrup, consisting of a manganine wire between 4 and 5 meters long, wound around a marble cylinder. The wire was calibrated by the method of Strouhal and Barus.*

The resistance coils were standardized against a rheostat which had been corrected by the United States Bureau of Standards. A number of forms of telephone receivers were tried, and finally a sensitive form furnished by Leeds and Northrup was adopted. The very satisfactory inductoria were also made by Leeds and Northrup.

Three separate readings on the bridge were made for each solution at each temperature, different resistances being, of course, used for each reading. The average of the conductivities obtained by these measurements, which differed only slightly from one another, was taken as the true conductivity of the solution. The measuring flasks and burettes used in this work were generally calibrated by the method of Morse and Blalock.† For the work from 0° to 35° the measuring apparatus was all calibrated at 20°, and the results at lower and higher temperatures multiplied by the proper factor. For the work from 35° to 65° the measuring apparatus was usually calibrated at 50°, and the proper correction inserted into the results at the lower and higher temperatures.

The conductivities are all expressed in terms of potassium chloride solutions which were used for standardizing the cells.

CONDUCTIVITY CELLS.

The form of cell used in this work is shown in fig. 1. The glass tubes carrying the electrodes are sealed firmly into the tops and bottoms of the ground-glass stoppers, and these tubes are sealed down tightly on to the platinum plates serving as electrodes. The plates are thus held firmly in position, and the distance apart is fixed for any given cell.

In making a series of readings at any given temperature, as many cells were used as there were solutions of different concentrations of the salt in question to be measured. Eight such cells constituted a set, and the distances between the plates and the sizes of the plates were adapted to the concentrations to be studied.

The conductivity of the water was determined in a cell especially constructed for this purpose. It consisted of two concentric platinum cylinders, about 1 mm. apart and 6 cm. long, shown in fig. 2. Glass tubes carrying platinum wires were sealed down on to the tops of these cylinders. These glass tubes were firmly sealed into the top and bottom of the ground-glass stopper.

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*Wied. Ann., **10**, 326 (1880). †Amer. Chem. Journ., **16**, 479 (1894).

The cells were generally covered with a little platinum black, to increase the sharpness of the minimum in the reading on the bridge. The cylindrical type of cell, however, was never blackened.

The platinum plates used as electrodes were cut from sheet platinum about 1 mm. thick. The relatively thick plates were much less liable to bend and change the constant after it was once determined.

CELL CONSTANTS.

The cell constants were determined with standard solutions of potassium chloride whose molecular conductivity at 25° was determined with a high degree of accuracy. The cells to be used with the more concentrated solutions, and whose plates were therefore most widely apart, were all standardized with a $n/50$ solution of potassium

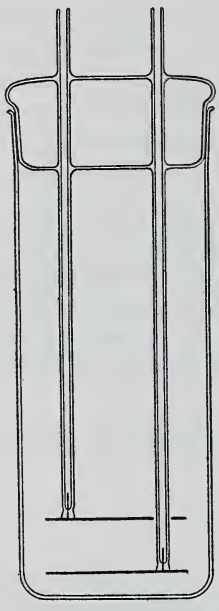

FIG. 1.

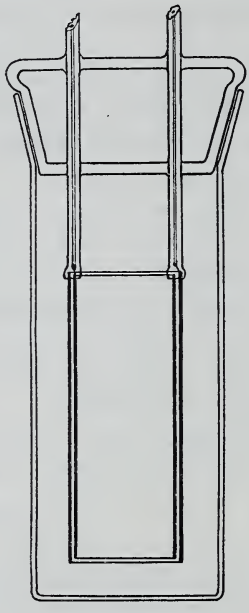

FIG. 2.

chloride. The cells to be used with the more dilute solutions were all standardized with a $n/500$ solution of the same salt, while the cylindrical cells were standardized with a $n/2000$ solution of potassium chloride. The solutions of potassium chloride of different concentrations were used for the different cells, in order that the resistance to be thrown into the rheostat would be of the order of magnitude to give a sharp reading on the bridge.

The cell constants in every set of cells used in this work were redetermined once or twice a month during the entire time that this series of investigations was in progress. With reasonably careful handling the constant of any cell underwent very small change during an entire year's work.

When the cells were used over the temperature range 35° to 65°, certain precautions were necessary in connection with the constants. It was found that at these

higher temperatures a strain seemed to develop in the cells unless they were kept at a fairly uniform temperature. This resulted in a small change in the cell constants, due either to a change in the distance between the plates or in the surfaces of the plates themselves. Errors would be introduced, especially in the case of those cells whose plates were close together—which had small cell constants.

Since such a variation as that referred to above had not previously been observed over the temperature range 0° to 35°, it was thought that the changes in the cell might be reduced to a minimum by keeping the cells at a temperature which was about the mean of those employed in the experimental work. Accordingly, the cells, when not in use, were filled with pure water and placed in a bath which was maintained continuously at a temperature of from 45° to 50°.

To test the accuracy of the procedure adopted the following experiments were carried out. The conductivities of several different substances at the three dilutions, 5, 1024, and 2048 liters were measured in the cells ordinarily used for solutions of these concentrations. The measurements were first carefully made at 35°, then the solutions warmed to 65° and their conductivities determined. The solutions were then cooled down to 35° and their conductivities redetermined. If the conductivities found the second time at 35° agreed with those initially found at this temperature, it would be some evidence as to the reliability of the method used. In about half the cases the two sets of measurements at 35° agreed very satisfactorily, In the other half, the second readings differed slightly from the first, and the difference seemed to be independent of the cell employed or the concentration of the solution used.

In all of those cases where any difference was detected between the initial and final conductivities at 35°, this difference always disappeared entirely on allowing the cells to stand at 35° for two or three hours. This showed that any slight change that the cell might have undergone at the higher temperature disappeared when the cell was kept for a time at the lower temperature.

SOLUBILITY OF GLASS.

In conductivity work at ordinary temperatures this factor has always been neglected and probably is not sufficiently large to influence the results, even with very dilute solutions. However, at 50° the error introduced by this factor at a dilution of 1000 is greater than any of the other ordinary experimental errors. At 65° the solubility of the glass is still greater, and at 80° the conductivity of pure water is increased tenfold on remaining in the cell for a couple of hours. In this connection it may be stated that the cells employed were made of hard glass. Of course, the amount of glass dissolved depends upon the exact nature of the latter, and was found to vary considerably with the different cells used, and at different intervals in the case of any one cell. The idea of introducing a correction for the solubility of the glass was abandoned, but the difficulty was overcome in another way. It was found that after the cells had been heated with water, acid, and alkali for several days, the amount of glass dissolved gradually decreased and finally amounted to practically nothing. After this treatment, as the cells were kept in a bath at 45° to 50° and the water in them changed once a day, the solubility of the glass at 65°

was always negligible. It is quite certain that for cups made and treated as above described the solubility of the glass does not stand in the way of accurate work up to 65°.

Since the solubility of glass increases very rapidly with the temperature above 65°, it was decided not to carry these measurements of conductivity to a temperature higher than 65°.

PREPARATION OF THE SOLUTIONS.

All of the substances used were obtained from Kahlbaum. These were purified by the method best adapted to each substance, and the purity of the compound tested in every case.

Whenever the nature of the compound permitted, the mother solution was prepared by directly weighing out the amount of the pure compound desired. In other cases the mother solution was standardized by the best gravimetric method available for that purpose. In the case of the organic acids the mother solution was frequently standardized by titration against a standard solution of an alkali.

Two sets of solutions of every compound were prepared—the one to be used for measurements from 0° to 35°, and the other set to be studied from 35° to 65°. The solutions to be used over the temperature range 0° to 35° were made up at 20°, and those solutions to be measured from 35° to 65° were generally made up at 50°, in vessels calibrated for 20° and 50° respectively. Since the coefficient of expansion of water increases greatly with the temperature, it is necessary to apply the proper correction to the conductivities of solutions taken at 35° and 65°, when the solutions were made up at 50°.

When a standard solution is cooled from 50° to 35° there is a contraction in volume and a consequent increase in the concentration of the solution. The value of μ_v for any solution would, therefore, be slightly too large. The value of μ_v as found must be multiplied by the factor 0.994 for results at 35° when the solutions were made up at 50°. The correction factor for solutions made up at 50° and used at 65° is 1.0076.

The coefficient of expansion for distilled water is somewhat less than that for an aqueous solution. However, the difference in the coefficients for water and for our most concentrated solution is so small that it is negligible.

By making use of the above correction it was necessary to prepare only one set of solutions for each salt for the temperature range, 35° to 65°; and, consequently, much pure material and time were saved.

By preparing one set of solutions to be used from 0° to 35°, and another set of solutions from entirely new material for use from 35° to 65°, we had a test of the purity of the material used, the proper standardization of the solutions, and the correctness of the conductivity values herein given. The two sets of solutions were both measured at 35°, and when discrepancies in the two sets of results, of appreciable order of magnitude, manifested themselves; as was inevitable in some cases where about 40,000 measurements were made, the work was repeated over the higher range in temperature, or over the lower range in temperature, or over the entire temperature range.

From these two mother solutions all of the more dilute solutions were prepared, directly or indirectly, using carefully calibrated flasks and burettes.

WATER.

All of the water used in this work was purified by the method worked out a number of years ago in this laboratory by Jones and Mackay.* It consisted in distilling the distilled water of the laboratory from chromic acid (potassium dichromate and sulphuric acid), which burned up any organic matter present in the water, and then redistilling the water from barium hydroxide. The sulphuric acid held back all ammonia formed from the organic substances, while the barium hydroxide combined all the carbon dioxide formed from the oxidation of the organic matter by the chromic acid.

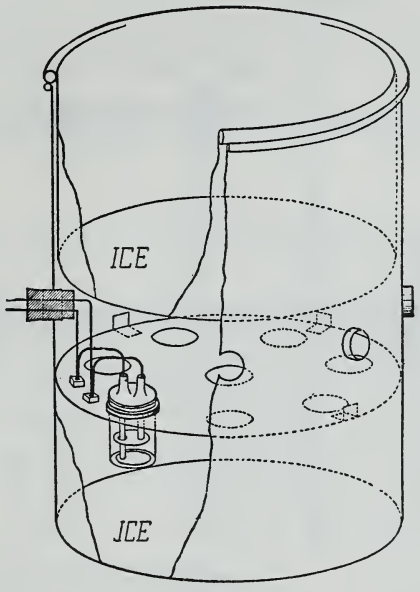

FIG. 3.

When the water was distilled from barium hydroxide, it was distilled first from a Jena glass balloon-flask and the vapor conducted into a retort also containing a little of the hydroxide. The water-vapor after leaving the retort was condensed in a tube of block-tin. By this means 10 to 15 liters of water could be obtained daily, having a conductivity of from 0.8 to 1.0×10^{-6} at zero.

BATHS.

The baths used for obtaining the various temperatures were constructed as follows. The zero bath is shown in fig. 3. The bottom of the bath into which the cells were plunged was filled with finely powdered ice moistened with a little pure water. The air above the cells was kept at very nearly zero by suspending just above the cells a pan filled with finely crushed ice moistened with pure water. In this way the solutions whose conductivities were to be measured at zero were kept to within 0.01 to 0.02 of zero.

*Amer. Chem. Journ., **19**, 91 (1897).

The second temperature at which the conductivity measurements were made was at first taken as that of the hydrant water. A reasonably constant temperature could be obtained by allowing a rapid stream of hydrant water to flow through a large vessel of water. This was soon abandoned and a temperature of 10°, 12.5° or 15° was obtained as follows: A stream of hydrant water was allowed to flow through a large tub of water, which was warmed by a small flame placed beneath, and the temperature was regulated by the thermoregulator described by Reid.*

The higher temperatures, 25°, 35°, 50° and 65° were obtained as follows: The water-bath used had the form shown in fig. 4. It consisted of a double-walled

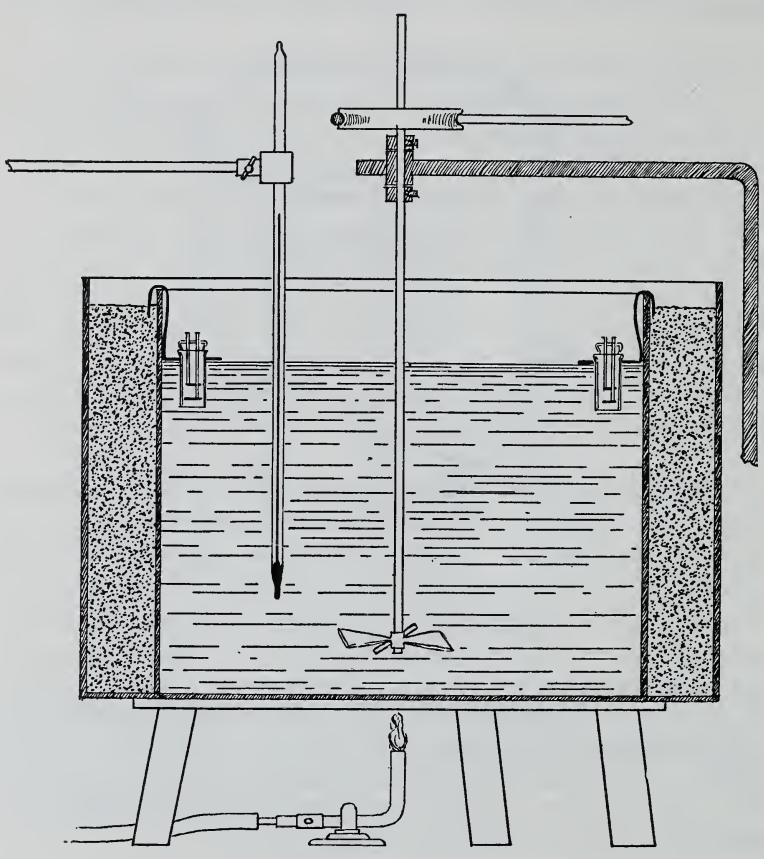

Fig. 4.

metal tub, the outer walls being 18 inches apart and the inner tub being 14 inches in diameter. The space between the two walls was filled with asbestos cement. which is a very poor conductor of heat. The inner vessel was filled with water, heated by a flame placed beneath and regulated by a thermoregulator. The top of the bath was covered with a neatly fitting piece of asbestos board. It was possible to keep any one of these baths to within 0.02° to 0.03° of the temperature desired. When working over the higher range in temperature the cells were kept over night in the 50° bath.

*Amer. Chem. Journ., **41**, 148 (1909).

INVESTIGATORS WHO HAVE WORKED ON THE PROBLEM.

The work recorded in this monograph has been done by twelve investigators, who have worked from one to nearly three years each upon the problem. Drs. Clover, Hosford, Howard, Kreider, Smith, and Winston worked one year each. Drs. Jacobson, Shaeffer, and Wight worked two years each, while Drs. Springer, West, and Wightman worked between two and three years each.

The following abbreviations are used after the name of the compound to show by whom the work in question was done; the first abbreviation referring to the investigator who worked over the range in temperature 0° to 35°, and the second abbreviation referring to the one who worked over the temperature range 35° to 65°. In a number of cases the same experimenter studied a given salt over both ranges in temperature. In these cases there is, of course, only one abbreviation.

C = Clover	J = Jacobson	Sm = Smith	Wt = Wight
H = Hosford	K = Kreider	Sp = Springer	Wm = Wightman
Hw = Howard	Sh = Shaeffer	W = West	Ws = Winston

THE RESULTS.

The volume of the solution, or the number of liters, that contain a gram-molecular weight of the electrolyte, is expressed by v. The molecular conductivity calculated by the equation $\mu_v = \frac{cva}{wb}$ is expressed by μ_v at the temperature in question; c being the constant of the cell, V the volume of the solution, a the reading on the arm of the bridge next to the rheostat, w the resistance in the box, and b the other arm of the bridge.

The percentage dissociation, represented by α, is calculated from the equation $\alpha = \frac{\mu_v}{\mu_\infty}$, μ_v being the molecular conductivity at the volume v, and μ_∞ the molecular conductivity at complete dissociation.

The temperature coefficients are expressed both in "conductivity units" and in "per cent." The coefficients in "conductivity units" are calculated thus—

$$\text{Coefficient} = \frac{\mu_v t_1 - \mu_v t}{t_1 - t}$$

where t_1 is the higher temperature and t the lower temperature. The coefficient in "per cent" is calculated by dividing the coefficient in "conductivity units" by $\mu_v t$, i. e., by the molecular conductivity at the lower temperature.

The values of α for some of the salts are not given. This is the case with those salts for which the value of μ_∞ was not nearly reached at the highest dilution used in this work. Such salts are nearly always strongly hydrolyzed by water, and this is the chief reason why the maximum molecular conductivity was not obtained at the highest dilutions employed. In such cases it is not possible to calculate even the approximate dissociation.

Lithium Chloride (J. and C.).

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 11.2°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
2	41.33	55.26	75.79	92.34	117.7	144.1
8	47.27	64.18	88.41	107.2	136.7	167.7
16	49.20	67.33	92.89	112.3	.....	.....
32	51.11	69.91	96.24	116.7	149.8	185.6
128	53.96	73.92	101.5	124.1	159.3	199.0
512	55.55	77.52	106.3	128.6	165.2	205.3
1024	56.08	77.62	107.2	130.2	167.5	208.3
2048	57.34	78.64	110.4	133.9	169.5	210.6

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 11.2°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
2	72.1	70.3	68.7	69.9	69.4	68.4
8	82.4	81.6	80.1	81.1	80.6	79.6
16	85.8	85.6	85.1	.....	.....	.....
32	89.1	88.9	87.2	88.3	88.4	88.1
128	94.1	94.0	91.9	93.9	94.0	94.5
512	96.9	97.0	96.6	97.3	97.5	97.5
1024	97.8	98.7	97.1	98.6	98.8	98.9
2048	100.0	100.0	100.0	100.0	100.0	100.0

Temperature Coefficients in Conductivity Units.

v	0–11.2°	11.2–25°	25–35°	35–50°	50–65°
2	1.24	1.49	1.65	1.69	1.76
8	1.51	1.75	1.88	1.97	2.07
16	1.62	1.85	1.94	.....	.....
32	1.68	1.91	2.04	2.21	2.39
128	1.79	2.00	2.26	2.35	2.65
512	1.90	2.08	2.23	2.44	2.67
1024	1.92	2.15	2.30	2.49	2.72
2048	.....	2.28	2.35	2.49	2.74

Temperature Coefficients in Per Cent.

v	0–11.2°	11.2–25°	25–35°	35–50°	50–65°
2	3.00	2.69	2.18	1.83	1.50
8	3.41	2.72	2.13	1.84	1.51
16	3.39	2.75	2.09	.....	.....
32	3.29	2.73	2.12	1.89	1.60
128	3.32	2.70	2.23	1.89	1.66
512	3.42	2.69	2.09	1.90	1.62
1024	3.42	2.77	2.15	1.91	1.62
2048	.....	2.90	2.13	1.88	1.62

Lithium Bromide (J. and W.).

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 9.3°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
2	44.83	55.94	78.52	96.02	.....	.....
4	.....	.....	.....	.....	137.0	168.4
8	49.84	63.42	89.78	109.5	139.3	170.4
16	51.51	66.75	95.03	114.9	.....	.....
32	53.10	68.77	98.66	119.5	150.7	186.4
128	56.57	73.70	106.7	128.6	160.0	198.0
512	57.44	75.06	108.2	130.6	169.7	213.6
1024	57.97	75.99	109.9	133.3	.....	.....
2048	61.05	80.68	114.8	138.3	173.3	216.1

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 9.3°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
2	73.4	69.3	68.4	69.4	.....	.....
4	.....	.....	.....	.....	79.0	77.9
8	81.6	78.6	78.2	79.2	80.4	78.8
16	84.4	82.7	82.8	83.1	.....	.....
32	87.0	85.2	85.9	86.4	87.0	86.3
128	92.7	91.4	92.9	93.0	92.3	91.6
512	94.1	93.0	94.3	94.4	97.7	98.8
1024	95.0	94.2	95.7	96.4	.....	.....
2048	100.0	100.0	100.0	100.0	100.0	100.0

Temperature Coefficients in Conductivity Units.

v	0–9.3°	9.3–25°	25–35°	35–50°	50–65°
2	1.19	1.43	1.75	.....	.....
4	.....	.....	.....	.....	2.09
8	1.46	1.67	1.97	1.99	2.07
16	1.63	1.80	1.99	.....	.....
32	1.68	1.90	2.08	2.08	2.38
128	1.84	2.10	2.19	2.10	2.53
512	1.89	2.11	2.24	2.61	2.93
1024	1.94	2.16	2.34	.....	.....
2048	2.33	2.17	2.35	2.33	2.85

Temperature Coefficients in Per Cent.

v	0–9.3°	9.3–25°	25–35°	35–50°	50–65°
2	2.66	2.56	2.23	.....	.....
4	.....	.....	.....	.....	1.52
8	2.93	2.63	2.19	1.82	1.49
16	3.16	2.70	2.09	.....	.....
32	3.16	2.91	2.11	1.74	1.58
128	3.25	2.85	2.05	1.63	1.58
512	3.29	2.81	2.07	2.00	1.72
1024	3.35	2.84	2.13	.....	.....
2048	3.82	2.68	2.05	1.69	1.64

Lithium Nitrate (J. and W.)

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 10°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
2	38.65	52.29	70.56	82.20	.....	.....
4	.....	.....	.....	.....	119.6	146.4
8	43.83	57.79	79.71	96.99	128.6	157.7
16	45.96	60.32	84.16	100.9	.....	.....
32	47.27	62.51	87.39	105.1	138.2	170.1
128	51.05	66.88	93.29	112.2	150.1	184.9
512	51.53	68.07	96.03	115.6	154.2	192.4
1024	52.00	69.47	98.01	117.8	160.3	197.8
2048	52.40	70.01	100.03	121.0	.....	.....

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 10°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
2	73.8	74.7	70.4	67.9	.....	.....
4	.....	.....	.....	.....	74.6	74.0
8	83.6	82.5	79.5	80.2	80.2	79.7
16	97.7	86.2	83.9	83.4	.....	.....
32	90.2	98.3	87.1	86.9	86.2	86.0
128	97.4	95.5	93.0	92.7	93.6	93.5
512	98.3	97.2	95.7	95.5	96.2	93.5
1024	99.2	99.2	97.7	97.4	100.0	100.0
2048	100.0	100.0	100.0	100.0	.....	.....

Temperature Coefficients in Conductivity Units.

v	0–10°	10–25°	25–35°	35–50°	50–65°
2	1.26	1.35	1.64	.....	.....
4	.....	.....	.....	.....	1.48
8	1.40	1.46	1.67	.....	1.94
16	1.44	1.59	1.70	.....	.....
32	1.52	1.66	1.77	.....	2.13
128	1.58	1.76	1.89	.....	2.32
512	1.65	1.86	1.96	.....	2.55
1024	1.75	1.90	1.98	.....	2.50
2048	1.76	2.02	2.07	.....	.....

Temperature Coefficients in Per Cent.

v	0–10°	10–25°	25–35°	35–50°	50–65°
2	3.26	2.58	2.32	.....	.....
4	.....	.....	.....	.....	1.48
8	3.19	2.53	2.09	.....	1.51
16	3.13	2.64	2.02	.....	.....
32	3.22	2.67	2.03	.....	1.54
128	3.10	2.63	2.03	.....	1.53
512	3.20	2.73	2.04	.....	1.65
1024	3.36	2.73	2.02	.....	1.56
2048	3.37	3.15	2.21	2.09	1.81

Lithium Sulphate (J. and W.)

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 9.6°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
2	47.08	61.97	89.59	107.5	.....	.....
4	.....	.....	.....	.....	168.8	207.8
8	66.74	88.18	128.4	154.9	197.3	242.7
16	75.50	100.2	144.5	175.3	.....	.....
32	82.15	109.5	159.3	194.0	245.7	301.8
128	96.81	129.0	188.5	230.3	290.5	302.3
512	104.6	139.1	202.8	248.3	324.3	405.0
1024	108.1	143.8	211.4	258.8	336.3	425.5
2048	111.8	148.0	219.5	258.0	338.7	430.8

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 9.6°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
2	42.1	41.9	40.8	40.1	.....	.....
4	.....	.....	.....	.....	49.8	48.2
8	59.7	59.6	58.5	57.8	58.2	56.3
16	67.5	67.7	65.8	65.4	.....	.....
32	73.5	74.0	72.6	72.4	72.5	70.0
128	86.6	87.2	85.9	85.9	85.7	84.1
512	93.8	94.0	92.4	92.7	95.7	94.0
1024	96.7	97.2	96.3	96.6	99.3	98.7
2048	100.0	100.0	100.0	100.0	100.0	100.0

Temperature Coefficients in Conductivity Units.

v	0–9.6°	9.6–25°	25–35°	35–50°	50–65°
2	1.55	1.68	1.79	.....	.....
4	.....	.....	.....	.....	2.60
8	2.23	2.25	2.65	2.83	3.00
16	2.57	2.88	3.08	.....	.....
32	2.85	3.23	3.47	3.45	3.74
128	3.35	3.86	4.18	4.01	4.78
512	3.59	4.14	4.55	5.07	5.38
1024	3.72	4.39	4.74	5.17	5.95
2048	3.77	4.64	4.85	5.38	6.14

Temperature Coefficients in Per Cent.

v	0–9.6°	9.6–25°	25–35°	35–50°	50–65°
2	3.29	2.71	2.00	.....	.....
4	.....	.....	.....	.....	1.54
8	3.34	2.55	2.06	1.83	1.52
16	3.37	2.87	2.13	.....	.....
32	3.47	2.96	2.18	1.78	1.52
128	3.46	2.99	2.22	1.74	1.64
512	3.43	2.98	2.25	2.04	1.66
1024	3.41	3.05	2.24	2.00	1.77
2048	3.37	3.15	2.21	2.09	1.81

Sodium Chloride (Sh. and C.).

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 12.5°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
2	48.1	66.4	86.5	104.2	132.6	161.8
8	53.5	74.7	98.5	118.5	150.5	184.5
32	57.5	80.6	106.8	129.5	164.3	201.0
128	60.4	84.9	112.6	136.3	175.4	214.7
512	62.3	87.8	116.4	141.2	181.1	222.9
1024	61.6	86.9	115.4	140.0	183.2	225.5
2048	62.2	88.0	116.8	140.9	184.7	228.5
4096	62.6	88.3	117.0	141.3	.....	.....

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 12.5°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
2	77.2	76.8	74.3	73.8	71.8	70.8
8	85.8	85.3	84.6	83.9	81.5	80.7
32	92.4	91.8	91.7	91.6	89.0	88.0
128	96.9	96.7	96.6	96.5	95.0	94.0
512	100.0	100.0	100.0	100.0	98.0	97.5
1024	98.9	98.9	99.1	99.1	99.2	98.7
2048	100.0	100.0	100.0	100.0	100.0	100.0
4096	100.0	100.0	100.0	100.0	.....	.....

Temperature Coefficients in Conductivity Units.

v	0–12.5°	12.5–25°	25–35°	35–50°	50–65°
2	1.49	1.60	1.77	1.89	1.95
8	1.69	1.89	2.00	2.13	2.27
32	1.84	2.09	2.27	2.32	2.45
128	1.96	2.21	2.37	2.61	2.62
512	2.04	2.28	2.48	2.66	2.79
1024	2.02	2.28	2.46	2.88	2.82
2048	2.05	2.30	2.41	2.92	2.92
4096	2.04	2.32	2.38	.....	.....

Temperature Coefficients in Per Cent.

v	0–12.5°	12.5–25°	25–35°	35–50°	50–65°
2	3.12	2.41	2.04	1.81	1.47
8	3.15	2.41	2.03	1.80	1.51
32	3.24	2.59	2.03	1.79	1.49
128	3.24	2.60	2.11	1.92	1.49
512	3.27	2.59	2.12	1.88	1.54
1024	3.27	2.60	2.13	2.06	1.54
2048	3.28	2.59	2.06	2.07	1.58
4096	3.25	2.60	2.02	.....	.....

Sodium Bromide (W. and C.).

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 11.8°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
2	51.46	69.24	91.9	106.25	131.1	162.6
8	55.36	75.26	100.3	119.2	151.4	184.1
16	57.35	78.17	105.1	.....	.....	.....
32	58.79	80.03	107.7	129.1	164.5	201.0
128	61.23	84.35	113.3	136.7	174.6	212.6
512	63.02	87.17	116.8	140.5	180.1	219.5
1024	.....	.....	.....	141.4	180.9	222.8
2048	64.48	89.34	121.1	142.3	182.0	227.0

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 11.8°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
2	79.8	77.5	75.9	74.7	72.0	71.6
8	85.9	84.2	82.8	83.8	83.2	81.1
16	88.9	87.5	86.8	.....	.....	.....
32	91.2	89.6	88.9	90.7	90.4	88.5
128	95.0	94.4	93.6	96.1	95.9	93.7
512	97.7	97.6	96.4	98.7	98.9	96.7
1024	.....	.....	.....	99.4	99.4	98.2
2048	100.0	100.0	100.0	100.0	100.0	100.0

Temperature Coefficients in Conductivity Units.

v	0–11.8°	11.8–25°	25–35°	35–50°	50–65°
2	1.50	1.72	.....	1.66	2.10
8	1.69	1.90	1.89	2.15	2.18
16	1.76	2.04	.....	.....	.....
32	1.80	2.10	2.14	2.36	2.43
128	1.96	2.19	2.34	2.53	2.53
512	2.04	2.24	2.37	2.64	2.63
1024	.....	.....	.....	2.63	2.79
2048	2.11	2.40	.....	2.65	3.00

Temperature Coefficients in Per Cent.

v	0–11.8°	11.8–25°	25–35°	35–50°	50–65°
2	2.91	2.48	.....	1.56	1.60
8	3.05	2.52	1.88	1.80	1.44
16	3.07	2.61	.....	.....	.....
32	3.06	2.62	1.99	1.83	1.48
128	3.20	2.60	2.07	1.85	1.45
512	3.24	2.57	2.03	1.88	1.46
1024	.....	.....	.....	1.86	1.54
2048	3.27	2.69	.....	1.86	1.65

Sodium Iodide (W.).

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 16°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
2	51.90	77.22	92.73	111.6	.....	.....
4	.....	.....	.....	115.9	146.2	179.0
8	55.26	83.52	100.4	121.6	152.6	187.5
16	57.03	86.36	104.2	125.8	.....	.....
32	58.62	89.02	107.4	130.6	163.4	200.2
128	60.97	93.20	112.5	136.8	173.2	213.2
512	61.81	94.91	114.7	139.3	180.6	222.0
1024	63.14	96.28	116.4	141.8	187.0	234.1
2048	64.15	98.40	119.1	144.5	.....	.....

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 16°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
2	80.5	78.5	77.9	77.2	.....	.....
4	.....	.....	.....	.....	78.2	76.5
8	85.7	84.9	84.3	84.2	81.6	80.1
16	88.4	87.8	87.5	87.1	.....	.....
32	90.9	90.5	90.2	90.4	87.4	85.5
128	94.5	94.7	94.5	94.7	92.6	91.1
512	95.8	96.5	96.3	96.4	96.6	94.8
1024	97.9	97.8	97.7	98.1	100.0	100.0
2048	100.0	100.0	100.0	100.0	.....	.....

Temperature Coefficients in Conductivity Units.

v	0–16°	16–25°	25–35°	35–50°	50–65°
2	1.58	1.72	1.88	.....	.....
4	.....	.....	.....	2.02	2.19
8	1.77	1.88	2.12	2.13	2.33
16	1.83	1.98	2.16	.....	.....
32	1.90	2.04	2.32	2.19	2.46
128	2.01	2.14	2.43	2.43	2.67
512	2.07	2.20	2.46	2.75	2.76
1024	2.07	2.24	2.54	3.01	3.14
2048	2.12	2.30	2.54	.....	.....

Temperature Coefficients in Per Cent.

v	0–16°	16–25°	25–35°	35–50°	50–65°
2	3.04	2.23	2.03	.....	.....
4	.....	.....	.....	1.74	1.49
8	3.20	2.25	2.11	1.75	1.52
16	3.21	2.29	2.07	.....	.....
32	3.24	2.29	2.16	1.68	1.50
128	3.30	2.30	2.16	1.78	1.54
512	3.35	2.32	2.14	1.98	1.53
1024	3.28	2.33	2.18	2.12	1.67
2048	3.29	2.34	2.13	.....	.....

Sodium Nitrate (J. and C.).

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
2	43.34	78.1	91.7	120.1	146.0
8	50.27	90.9	111.3	141.1	171.4
16	52.57	97.5	117.5	.....	.....
32	55.38	101.3	122.5	155.7	189.0
128	59.28	107.7	128.9	164.8	201.3
512	59.34	111.3	134.8	171.0	209.6
1024	59.39	114.0	138.5	173.0	213.2
2048	59.93	116.6	141.0	175.2	213.2

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
2	72.3	67.0	65.0	68.5	68.5
8	83.9	77.9	78.9	80.5	80.4
16	86.1	83.6	83.3	.....	.....
32	92.4	86.9	86.9	88.9	88.6
128	98.9	92.3	91.4	94.1	94.4
512	99.0	95.5	95.6	97.6	98.3
1024	99.8	97.8	98.2	98.8	100.0
2048	100.0	100.0	100.0	100.0	100.0

Temperature Coefficients in Conductivity Units.

v	0–25°	25–35°	35–50°	50–65°
2	1.39	1.36	1.89	1.73
8	1.62	2.04	1.99	2.02
16	1.79	2.00	.....	.....
32	1.83	2.12	2.21	2.22
128	1.94	2.12	2.39	2.43
512	2.08	2.35	2.40	2.57
1024	2.18	2.45	2.30	2.67
2048	2.27	2.44	2.28	2.53

Temperature Coefficients in Per Cent.

v	0–25°	25–35°	35–50°	50–65°
2	3.21	1.74	2.06	1.44
8	3.22	2.24	1.79	1.43
16	3.41	2.44	.....	.....
32	3.30	2.05	1.80	1.43
128	3.27	1.94	1.86	1.47
512	3.51	2.11	1.78	1.50
1024	3.68	2.15	1.56	1.54
2048	3.79	2.09	1.62	1.44

Sodium Chlorate (Sh.).

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 12.5°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
2	41.6	57.5	74.7	90.0	.....	.....
8	47.4	66.1	86.7	104.4	132.1	164.4
32	51.7	72.4	95.0	115.2	151.6	186.3
128	54.7	76.9	101.1	122.5	158.4	198.7
512	56.0	78.9	104.6	127.0	165.2	204.4
1024	56.2	79.0	104.1	126.3	167.8	211.3
2048	56.1	78.8	104.1	125.8	168.3	209.1

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 12.5°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
2	74.0	72.8	71.4	70.8	.....	.....
8	84.3	83.6	82.9	81.4	78.5	77.7
32	91.9	91.6	90.8	90.7	90.0	88.1
128	97.3	97.3	96.6	96.4	94.1	94.0
512	99.8	100.0	100.0	100.0	98.1	96.7
1024	100.0	100.0	.....	.....	99.6	100.0
2048	99.7	99.7	.....	.....	100.0	99.0

Temperature Coefficients in Conductivity Units.

v	0–12.5°	12.5–25°	25–35°	35–50°	50–65°
2	1.27	1.38	1.53	.....	.....
8	1.50	1.66	1.77	1.85	2.15
32	1.66	1.80	2.02	2.43	2.31
128	1.78	1.94	2.14	2.40	2.69
512	1.83	2.05	2.36	2.55	2.61
1024	1.82	2.01	2.22	2.77	2.90
2048	1.81	2.02	2.17	2.83	2.72

Temperature Coefficients in Per Cent.

v	0–12.5	12.5–25°	25–35°	35–50°	50–65°
2	3.05	2.40	2.04	.....	.....
8	3.12	2.41	2.05	1.82	1.62
32	3.21	2.49	2.12	2.12	1.52
128	3.25	2.53	2.12	1.96	1.69
512	3.26	2.64	2.25	2.01	1.58
1024	3.24	2.54	2.13	2.19	1.78
2048	3.22	2.56	2.09	2.25	1.62

Sodium Perchlorate (Sh.).

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 12\text{–}5°$	$\mu_v 25°$	$\mu_v 35°$
8	49.4	68.9	90.2	108.0
32	53.2	74.5	98.3	118.1
128	56.6	79.2	104.1	126.2
512	57.0	80.0	105.7	127.8
1024	56.8	79.7	105.4	127.8

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 12.5°$	$\alpha 25°$	$\alpha 35°$
8	88.4	86.2	84.5	84.5
32	93.3	93.1	93.0	92.4
128	99.3	99.0	98.5	98.7
512	100.0	100.0	100.0	99.9
1024	99.6	99.6	99.7	100.0

Temperature Coefficients in Conductivity Units.

v	0–12.5°	12.5–25°	25–35°
8	1.56	1.70	1.78
32	1.70	1.89	1.98
128	1.81	1.99	2.21
512	1.84	2.05	2.21
1024	1.83	2.06	2.24

Temperature Coefficients in Per Cent.

v	0–12.5°	12.5–25°	25–35°
8	3.16	2.47	2.00
32	3.20	2.54	2.01
128	3.20	2.52	2.12
512	3.22	2.56	2.09
1024	3.20	2.57	2.12

Sodium Sulphate (Ws. and C.).

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 12.5°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
2	.....	.....	.....	.....	172.5	205.4
4	68.49	97.54	129.13	156.71	.....	.....
8	78.51	111.46	146.40	178.24	221.8	274.3
32	94.51	132.72	176.76	215.19	262.2	337.2
128	107.54	152.49	203.10	247.02	320.4	399.0
512	117.46	166.24	221.21	269.50	353.2	437.9
1024	119.65	169.61	226.34	276.92	.....	.....
2048	125.95	176.08	235.35	287.02	372.6	462.5
4096	127.73	181.61	243.42	294.48	376.0	468.7

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 12.5°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
2	.....	.....	.....	.....	45.9	43.8
4	53.6	53.7	53.1	53.2	.....	.....
8	61.4	61.4	60.1	60.5	59.0	58.5
32	73.9	73.1	72.6	73.0	69.7	71.9
128	84.1	84.0	83.4	83.9	85.2	85.1
512	91.9	91.6	90.9	91.5	93.9	93.4
1024	93.6	93.4	93.0	94.0	.....	.....
2048	98.5	97.0	96.7	97.4	99.1	98.7
4096	100.0	100.0	100.0	100.0	100.0	100.0

Temperature Coefficients in Conductivity Units.

v	0–12.5°	12.5–25°	25–35°	35–50°	50–65°
2	.....	.....	.....	.....	2.19
4	2.32	2.53	2.76	.....	.....
8	2.63	2.80	3.18	2.91	3.50
32	3.05	3.52	3.84	3.13	5.00
128	3.59	4.05	4.39	4.90	5.24
512	3.90	4.40	4.83	5.58	5.65
1024	4.00	4.54	5.06	.....	.....
2048	4.01	4.74	5.17	5.71	5.99
4096	4.31	4.94	5.11	5.43	6.18

Temperature Coefficients in Per Cent.

v	0–12.5°	12.5–25°	25–35°	35–50°	50–65°
2	.....	.....	.....	.....	1.27
4	3.39	2.59	2.14	.....	.....
8	3.35	2.51	2.17	1.63	1.58
32	3.23	2.65	2.17	1.46	1.91
128	3.34	2.66	2.16	2.00	1.64
512	3.32	2.65	2.18	2.07	1.60
1024	3.34	2.68	2.19	.....	.....
2048	3.18	2.69	2.20	2.00	1.61
4096	3.37	2.72	2.10	1.84	1.64

Sodium Carbonate (W.).

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 15.3°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
2	50.90	78.94	100.4	.....	.....	.....
4	.....	.....	.....	145.9	190.9	237.9
8	70.70	109.1	137.8	168.5	219.6	271.9
16	79.75	123.8	155.4	.....	.....	.....
32	87.28	134.7	170.8	209.0	272.1	343.4
128	99.16	155.4	197.9	241.9	318.3	403.3
512	105.8	166.9	209.6	258.0	336.7	424.7
1024	110.8	173.9	218.1	269.7	350.1	439.5

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 15.3°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
2	.....	.....	.....	.....	.....	.....
4	.....	.....	.....	.....	.....	.....
8	.....	.....	.....	.....	.....	.....
16	.....	.....	.....	.....	.....	.....
32	.....	.....	.....	.....	.....	.....
128	.....	.....	.....	.....	.....	.....
512	.....	.....	.....	.....	.....	.....
1024	.....	.....	.....	.....	.....	.....

Temperature Coefficients in Conductivity Units.

v	0–15.3°	15.3–25°	25–35°	35–50°	50–65°
2	1.83	2.21	.....	.....	.....
4	.....	.....	.....	3.00	3.13
8	2.51	2.96	3.07	3.41	3.49
16	2.88	3.26	.....	.....	.....
32	3.10	3.72	3.82	4.21	4.74
128	3.67	4.38	4.40	5.09	5.67
512	3.99	4.40	4.84	5.25	5.87
1024	4.12	4.56	5.16	5.36	5.96

Temperature Coefficients in Per Cent.

v	0–15.3°	15.3–25°	25–35°	35–50°	50–65°
2	3.59	2.80	.....	.....	.....
4	.....	.....	.....	2.05	1.64
8	3.55	2.71	2.23	2.02	1.59
16	3.61	2.64	.....	.....	.....
32	3.55	2.77	2.24	2.00	1.74
128	3.70	2.82	2.22	2.10	1.78
512	3.77	2.64	2.39	2.04	1.74
1024	3.72	2.62	2.37	1.99	1.70

Disodium Acid Phosphate (J. and Sh.).

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 25°$	$\mu_v 30°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
16	67.3	133.4	148.6	164.3	215.3	268.5
32	75.0	147.8	164.5	182.4	238.7	298.9
128	88.4	168.6	188.1	212.1	278.4	350.9
512	91.7	182.3	203.8	231.6	304.7	384.6
1024	91.9	183.7	205.2	236.4	310.2	393.2
2048	92.0	184.0	206.2	240.3	315.6	399.0

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 25°$	$\alpha 30°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
16	68.8	72.5	72.1	68.4	68.2	67.3
32	81.5	80.3	79.8	75.9	75.6	74.9
128	96.1	91.5	91.2	88.3	88.2	87.9
512	99.7	99.1	98.8	96.4	96.5	96.4
1024	99.9	99.8	99.5	98.4	98.3	98.5
2048	100.0	100.0	100.0	100.0	100.0	100.0

Temperature Coefficients in Conductivity Units.

v	0–25°	25–30°	35–50°	50–65°
16	2.64	3.04	3.40	3.55
32	2.91	3.34	3.75	4.02
128	3.21	3.90	4.42	4.83
512	3.62	4.30	4.87	5.33
1024	3.67	4.30	4.92	5.53
2048	3.68	4.44	5.02	5.56

Temperature Coefficients in Per Cent.

v	0–25°	25–30°	35–50°	50–65°
16	4.17	2.28	2.07	1.65
32	3.88	2.26	2.06	1.69
128	3.63	2.32	2.08	1.73
512	3.95	2.35	2.10	1.75
1024	3.99	2.34	2.08	1.78
2048	4.00	2.41	2.09	1.76

Sodium Ammonium Acid Phosphate (Sh.).

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 12.5°$	$\mu_v 25°$	$\mu_v 35°$
8	65.6	.....	.....	.....
32	84.4	119.2	158.7	186.5
128	96.5	136.7	181.4	216.6
512	100.7	141.4	186.4	221.6
1024	104.7	145.7	193.6	235.2
2048	103.9	144.7	190.9	229.2

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 12.5°$	$\alpha 25°$	$\alpha 35°$
8	62.6	.....	.....	.....
32	80.6	81.7	81.9	79.3
128	91.3	93.1	93.7	92.1
512	96.3	97.0	96.2	94.2
1024	100.0	100.0	100.0	100.0
2048	99.2	99.3	98.6	.....

Temperature Coefficients in Conductivity Units.

v	0–12.5°	12.5–25°	25–35°
8	.....	.....	.....
32	2.78	3.16	2.78
128	3.21	3.57	3.52
512	3.26	3.60	3.52
1024	3.36	3.83	4.16
2048	3.36	3.70	3.83

Temperature Coefficients in Per Cent.

v	0–12.5°	12.5–25°	25–35°
8	.....	.....	.....
32	3.30	2.65	1.49
128	3.32	2.61	1.62
512	3.24	2.54	1.58
1024	3.22	2.62	1.76
2048	3.23	2.55	1.67

Sodium Ferrocyanide (H. and Hw.).

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 12.5°$	$\mu_v 25°$	$\mu_v 35$	$\mu_v 50°$	$\mu_v 65°$
8	136.7	194.9	259.2	313.4	386.89	469.61
16	151.3	215.5	287.0	347.7	418.90	508.69
32	167.1	238.5	318.5	386.2	487.25	593.80
128	203.5	289.6	385.9	464.5	594.44	727.68
512	234.2	334.1	446.4	543.2	730.35	909.86
1024	253.4	361.7	482.4	581.2	781.99	979.35
2048	266.4	380.3	504.0	612.0	804.49	1000.84
4096	275.7	398.1	527.1	632.2	803.06	.....

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 12.5°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
8	49.58	48.96	49.18	49.57	48.09	46.92
16	54.88	54.13	54.45	55.00	52.07	50.83
32	60.61	59.91	60.43	61.00	60.57	59.33
128	73.81	72.74	73.21	73.47	73.89	72.71
512	84.95	83.92	84.69	85.92	90.78	90.91
1024	91.91	90.86	91.52	91.93	97.20	97.85
2048	96.63	95.53	95.62	96.81	100.00	100.00
4096	100.00	100.00	100.00	100.00	99.82	.....

Temperature Coefficients in Conductivity Units.

v	0–12.5°	12.5–25°	25–35°	35–50°	50–65°
8	4.66	5.14	5.42	4.90	5.51
16	5.14	5.72	6.07	4.75	5.99
32	5.71	6.40	6.77	6.73	7.10
128	6.89	7.70	7.86	8.66	8.88
512	7.99	8.98	9.68	12.48	11.90
1024	8.66	9.66	9.88	13.38	13.16
2048	9.11	9.90	10.80	12.83	13.09
4096	9.79	10.32	10.51	11.39	11.06

Temperature Coefficients in Per Cent.

v	0–12.5°	12.5–25°	25–35°	35–50°	50–65°
8	3.41	2.64	2.09	1.56	1.42
16	3.40	2.65	2.12	1.37	1.43
32	3.42	2.68	2.13	1.74	1.46
128	3.39	2.66	2.04	1.86	1.49
512	3.41	2.69	2.17	2.29	1.63
1024	3.42	2.67	2.05	2.30	1.68
2048	3.42	2.60	2.14	2.09	1.63
4096	3.55	2.59	2.00	1.80	1.38

Sodium Tetraborate (Borax) (Ws. and H.)

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 12.5°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
16	57.99	83.76	113.54	139.83	182.8	231.3
32	64.36	92.74	125.49	154.61	204.0	256.2
128	72.87	104.81	141.72	174.52	224.1	281.6
512	78.04	112.22	152.00	187.97	247.8	316.7
1024	79.20	113.29	153.40	189.37	.....	.....
2048	83.45	119.55	161.23	198.31	207.3	359.3
4096	85.50	122.28	163.99	202.65	.....	.....

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 12.5°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
16	67.8	68.5	69.2	69.0	67.6	64.4
32	75.3	75.8	76.5	76.3	75.5	71.3
128	85.3	85.7	86.4	86.1	82.9	78.4
512	91.3	91.8	92.7	92.7	91.7	88.1
1024	92.7	92.6	93.5	93.4	.....	.....
2048	97.6	97.8	98.3	97.8	100.0	100.0
4096	100.0	100.0	100.0	100.0	.....	.....

Temperature Coefficients in Conductivity Units.

v	0–12.5°	12.5–25°	25–35°	35–50°	50–65°
16	2.06	2.38	2.63	2.87	3.23
32	2.27	2.62	2.91	3.29	3.48
128	2.56	2.95	3.28	3.31	3.83
512	2.73	3.18	3.60	4.00	4.59
1024	2.73	3.21	3.60	.....	.....
2048	2.89	3.33	3.71	4.80	5.93
4096	2.94	3.34	3.87	.....	.....

Temperature Coefficients in Per Cent.

v	0–12.5°	12.5–25°	25–35°	35–50°	50–65°
16	3.55	2.84	2.32	2.05	1.76
32	3.53	2.83	2.32	2.13	1.71
128	3.51	2.82	2.32	1.89	1.71
512	3.50	2.83	2.37	2.13	1.85
1024	3.45	2.83	2.35	.....	.....
2048	3.46	2.79	2.30	2.42	2.19
4096	3.44	2.73	2.36	.....	.....

Sodium Acetate (W.).

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 13.6°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
2	28.39	41.93	54.86	67.06	.....	.....
4	.....	.....	.....	.....	97.28	121.0
8	34.30	50.73	66.25	81.09	106.0	131.7
16	36.37	53.86	70.17	86.01	.....	.....
32	38.11	56.59	73.81	90.55	117.9	147.7
128	40.41	60.22	78.32	96.43	125.7	157.5
512	41.21	61.63	80.14	99.34	129.3	162.7
1024	40.65	61.15	79.12	98.6	.....	.....
2048	41.28	61.97	80.12	99.4	130.4	164.5

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 13.6°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
2	68.9	67.9	68.5	67.5	.....	.....
4	.....	.....	.....	.....	74.6	73.5
8	83.2	82.3	82.7	81.6	81.3	80.1
16	88.3	87.4	87.6	86.6	90.4	89.8
32	92.2	91.8	92.1	91.2	.....	.....
128	98.1	97.7	97.7	97.1	96.4	95.7
512	100.0	100.0	100.0	100.0	99.2	98.9
1024	100.0	100.0	100.0	100.0	.....	.....
2048	100.0	100.0	100.0	100.0	100.0	100.0

Temperature Coefficients in Conductivity Units.

v	0–13.6°	13.6–25°	25–35°	35–50°	50–65°
2	1.00	1.13	1.22	.....	.....
4	.....	.....	.....	.....	1.58
8	1.21	1.36	1.48	1.73	1.71
16	1.29	1.43	1.58	.....	.....
32	1.36	1.51	1.67	1.82	1.99
128	1.46	1.59	1.81	1.95	2.12
512	1.50	1.62	1.92	2.00	2.23
1024	1.51	1.58	1.95	.....	.....
2048	1.52	1.59	1.93	2.07	2.27

Temperature Coefficients in Per Cent.

v	0–13.6°	13.6–25°	25–35°	35–50°	50–65°
2	3.51	2.69	2.22	.....	.....
4	.....	.....	.....	.....	1.62
8	3.53	2.68	2.23	2.13	1.61
16	3.52	2.66	2.25	.....	.....
32	3.57	2.67	2.26	2.01	1.69
128	3.61	2.64	2.31	2.02	1.69
512	3.67	2.63	2.38	2.01	1.72
1024	3.71	2.58	2.46	.....	.....
2048	3.68	2.57	2.41	2.09	1.74

Potassium Chloride (W. and C.).

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 4.3°$	$\mu_v 15.5°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
2	62.96	70.09	91.09	109.5	130.8	161.9	193.7
8	66.47	74.48	98.24	118.6	142.5	179.1	215.9
16	68.40	76.95	101.5	122.9	147.7	.....	.....
32	70.27	78.95	104.9	126.8	152.5	192.8	234.1
128	73.00	82.25	109.4	132.4	159.9	204.3	247.1
512	74.24	83.59	111.9	135.5	163.0	209.1	255.8
1024	75.14	84.59	112.9	137.0	165.4	211.6	258.3
2048	.....	.....	.....	.....	.....	212.1	259.3

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 4.3°$	$\alpha 15.5°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
2	83.8	82.9	80.7	79.9	79.0	76.3	76.4
8	88.5	88.0	87.0	86.6	86.2	84.4	83.3
16	91.0	91.0	89.9	89.7	89.3	.....	.....
32	93.5	93.3	92.0	92.6	92.2	90.9	90.3
128	97.2	97.2	96.9	96.6	96.7	96.3	95.3
512	98.8	98.8	99.1	98.9	99.5	98.6	98.6
1024	100.0	100.0	100.0	100.0	100.0	98.8	99.6
2048	.....	.....	.....	.....	.....	100.0	100.0

Temperature Coefficients in Conductivity Units.

v	0–4.3°	4.3–15.5°	15.5–25°	25–35°	35–50°	50–65°
2	1.66	1.88	1.94	2.13	2.07	2.12
8	1.86	2.12	2.14	2.39	2.44	2.45
16	1.99	2.19	2.25	2.48	.....	.....
32	2.02	2.32	2.31	2.57	2.69	2.75
128	2.15	2.42	2.42	2.75	2.96	2.85
512	2.17	2.53	2.48	2.75	3.07	3.11
1024	2.20	2.53	2.54	2.84	3.08	3.11
2048	.....	.....	.....	.....	.....	3.15

Temperature Coefficients in Per Cent.

v	0–4.3°	4.3–15.5°	15.5–25°	25–35°	35–50°	50–65°
2	2.63	2.68	2.13	1.94	1.58	1.31
8	2.78	2.80	2.18	2.01	1.71	1.37
16	2.91	2.85	2.22	2.02	.....	.....
32	2.87	2.94	2.20	2.03	1.76	1.43
128	2.94	2.94	2.21	2.08	1.85	1.40
512	2.92	3.03	2.22	2.03	1.88	1.49
1024	2.93	2.99	2.25	2.07	1.86	1.47
2048	.....	.....	.....	.....	.....	1.49

Potassium Bromide (W. and C.).

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 14.5°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
2	65.82	93.21	114.4	136.2	165.1	196.7
8	68.01	98.45	121.3	145.6	181.4	218.1
16	70.10	101.7	125.2	150.5	.....	.....
32	71.84	104.6	128.8	154.6	195.3	236.5
128	74.79	109.0	134.5	162.0	206.0	250.0
512	75.73	111.3	137.6	165.5	211.6	256.6
1024	79.23	115.6	143.5	172.6	213.6	260.3
2048	.....	.....	.....	.....	216.7	263.7

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 14.5°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
2	83.1	80.6	79.7	78.9	76.2	74.6
8	85.8	85.2	84.5	84.4	83.7	82.7
16	88.5	88.0	87.2	87.2	.....	.....
32	90.8	90.5	89.8	89.6	90.1	89.7
128	94.4	94.3	93.7	93.9	95.1	94.8
512	95.6	96.3	95.9	95.9	97.6	97.3
1024	100.0	100.0	100.0	100.0	98.6	98.7
2048	.....	.....	.....	.....	100.0	100.0

Temperature Coefficients in Conductivity Units.

v	0–14.5°	14.5–25°	25–35°	35–50°	50–65°
2	1.89	2.02	2.18	1.93	2.11
8	2.10	2.18	2.43	2.39	2.45
16	2.18	2.24	2.53	.....	.....
32	2.26	2.30	2.58	2.71	2.75
128	2.35	2.43	2.75	2.93	2.93
512	2.45	2.50	2.79	3.07	3.00
1024	2.51	2.66	2.91	2.73	3.11
2048	.....	.....	.....	.....	3.13

Temperature Coefficients in Per Cent.

v	0–14.5°	14.5–25°	25–35°	35–50°	50–65°
2	2.87	2.17	1.90	1.42	1.28
8	3.09	2.21	2.00	1.64	1.35
16	3.07	2.20	2.02	.....	.....
32	3.15	2.20	2.00	1.75	1.41
128	3.14	2.23	2.04	1.81	1.42
512	3.24	2.25	2.03	1.86	1.42
1024	3.17	2.30	2.03	1.58	1.46
2048	.....	.....	.....	.....	1.45

Potassium Iodide (W.).

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 10.1°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
2	65.78	83.88	112.8	133.7	.....	.....
4	.....	.....	.....	.....	174.8	212.7
8	68.45	88.18	120.7	144.5	181.5	221.2
16	70.17	90.51	124.5	148.4	.....	.....
32	71.90	93.32	128.0	153.0	194.2	235.8
128	74.41	96.67	133.7	160.2	202.0	248.0
512	76.35	98.91	137.3	165.9	213.3	261.4
1024	77.77	101.9	141.8	170.9	217.6	268.1
2048	79.20	104.9	147.2	177.2	.....	.....

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 10.1°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
2	83.1	80.0	76.6	75.5	.....	.....
4	.....	.....	.....	.....	80.3	79.3
8	86.4	84.1	82.0	81.5	83.4	82.5
16	88.6	86.3	84.6	83.7	.....	.....
32	90.8	89.0	87.0	86.3	89.2	87.9
128	94.0	92.1	90.8	90.4	92.8	92.5
512	96.4	94.3	93.3	93.6	98.0	97.5
1024	98.2	97.1	96.3	96.4	100.0	100.0
2048	100.0	100.0	100.0	100.0	.....	.....

Temperature Coefficients in Conductivity Units.

v	0–10.1°	10.1–25°	25–35°	35–50°	50–65°
2	1.79	1.94	2.09	.....	.....
4	.....	.....	.....	.....	2.53
8	1.95	2.18	2.38	2.47	2.65
16	2.01	2.28	2.39	.....	.....
32	2.12	2.33	2.50	2.75	2.77
128	2.20	2.48	2.65	2.79	3.07
512	2.23	2.58	2.86	3.16	3.22
1024	2.39	2.68	2.91	3.11	3.37
2048	2.54	2.84	3.00	.....	.....

Temperature Coefficients in Per Cent.

v	0–10.1°	10.1–25°	25–35°	35–50°	50–65°
2	2.72	2.31	1.85	.....	.....
4	.....	.....	.....	.....	1.45
8	2.84	2.47	1.97	1.71	1.46
16	2.86	2.52	1.92	.....	.....
32	2.95	2.50	1.95	1.80	1.43
128	2.96	2.57	1.98	1.74	1.52
512	2.92	2.61	2.08	1.90	1.51
1024	3.07	2.63	2.05	1.82	1.55
2048	3.21	2.71	2.04	.....	.....

Potassium Nitrate (W. and C.).

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 10°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
2	54.02	69.67	95.21	113.2	141.3	170.0
8	61.94	80.22	111.0	131.8	165.0	199.6
16	65.33	84.31	116.3	.....	.....	.....
32	67.92	87.78	121.3	145.3	182.0	220.4
128	72.05	93.57	129.5	154.7	194.1	235.4
512	76.34	98.71	137.0	159.1	199.8	242.1
1024	76.31	99.80	139.6	161.2	202.7	245.2
2048	.....	.....	.....	160.9	202.5	246.1

Percentage Dissociation.

v	$a0°$	$a10°$	$a25°$	$a35°$	$a50°$	$a65°$
2	70.8	69.8	68.2	70.4	69.8	69.0
8	81.2	80.4	79.5	81.9	81.5	81.0
16	85.6	84.5	83.3	.....	.....	.....
32	89.0	88.0	86.9	90.3	89.9	89.4
128	94.4	93.8	92.8	96.1	95.9	95.5
512	100.0	98.9	98.1	98.9	98.7	98.3
1024	100.0	100.0	100.0	100.0	100.0	99.5
2048	.....	.....	.....	100.0	100.0	100.0

Temperature Coefficients in Conductivity Units.

v	0–10°	10–25°	25–35°	35–50°	50–65°
2	1.56	1.70	1.80	1.87	1.91
8	1.83	2.05	2.08	2.21	2.31
16	1.90	2.13	.....	.....	.....
32	1.99	2.23	2.40	2.45	2.56
128	2.15	2.40	2.52	2.63	2.75
512	2.24	2.55	2.21	2.71	2.82
1024	2.35	2.65	2.16	2.77	2.83
2048	.....	.....	.....	2.77	2.91

Temperature Coefficients in Per Cent.

v	0–10°	10–25°	25–35°	35–50°	50–65°
2	2.89	2.44	1.89	1.65	1.35
8	2.95	2.56	1.87	1.68	1.40
16	2.91	2.53	.....	.....	.....
32	2.93	2.54	1.98	1.69	1.41
128	2.98	2.56	1.95	1.70	1.42
512	2.93	2.58	1.61	1.70	1.41
1024	3.08	2.65	1.53	1.72	1.40
2048	.....	.....	.....	1.72	1.44

Potassium Chlorate (Sh.).

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 12.5°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
8	58.9	80.8	104.7	124.9	158.6	192.1
32	64.3	88.3	115.2	137.3	173.4	211.9
128	68.5	94.2	122.8	146.5	185.0	228.8
512	70.1	96.7	126.1	150.9	193.4	239.1
1024	70.6	97.7	127.8	153.1	197.4	241.5
2048	71.2	98.4	128.4	154.0	200.8	244.9
4096	72.4	100.7	131.4	157.6	204.3	249.7

Percentage Dissociation.

v	$a0°$	$a12.5°$	$a25°$	$a35°$	$a50°$	$a65°$
8	81.3	80.2	79.7	79.2	77.6	76.8
32	88.8	87.6	87.5	87.1	84.9	84.8
128	94.6	93.5	93.2	92.9	90.6	91.6
512	96.8	96.0	95.9	95.7	94.6	95.7
1024	97.5	97.2	97.2	97.1	96.6	96.7
2048	98.3	97.7	97.7	97.7	98.2	98.0
4096	100.0	100.0	100.0	100.0	100.0	100.0

Temperature Coefficients in Conductivity Units.

v	0–12.5°	12.5–25°	25–35°	35–50°	50–65°
8	1.75	1.91	2.02	2.24	2.23
32	1.94	2.15	2.21	2.41	2.57
128	2.07	2.29	2.36	2.57	2.92
512	2.12	2.35	2.48	2.83	3.05
1024	2.15	2.42	2.52	2.95	2.94
2048	2.18	2.44	2.56	3.12	2.94
4096	2.23	2.46	2.62	3.12	3.03

Temperature Coefficients in Per Cent.

v	0–12.5°	12.5–25°	25–35°	35–50°	50–65°
8	2.97	2.36	1.93	1.78	1.40
32	3.00	2.43	1.93	1.76	1.48
128	2.90	2.42	1.92	1.76	1.57
512	3.02	2.43	1.95	1.87	1.57
1024	3.04	2.47	1.97	1.92	1.49
2048	3.06	2.47	1.98	2.01	1.46
4096	3.09	2.44	1.98	1.97	1.48

Potassium Perchlorate (Sh.).

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 12.5°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
32	65.1	89.8	116.9	139.6	178.0	217.3
128	68.9	95.0	125.1	149.5	191.2	232.7
512	71.7	98.2	129.0	154.2	194.3	237.7
1024	72.0	99.5	130.7	155.3	195.9	240.6
2048	73.3	101.2	132.6	158.6	200.0	244.2
4096	74.3	102.6	134.5	160.7	206.4	251.3

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 12.5°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
32	87.6	87.6	86.9	86.9	86.2	86.4
128	92.7	92.5	93.0	93.0	92.1	92.4
512	96.5	95.7	95.9	95.3	94.1	94.2
1024	97.0	96.9	97.1	96.6	94.9	95.7
2048	98.6	98.5	98.5	98.6	96.9	97.2
4096	100.0	100.0	100.0	100.0	100.0	100.0

Temperature Coefficients in Conductivity Units.

v	0–12.5°	12.5–25°	25–35°	35–50°	50–65°
32	1.98	2.17	2.27	2.56	2.61
128	2.08	2.40	2.44	2.71	2.83
512	2.12	2.46	2.52	2.67	2.89
1024	2.20	2.49	2.56	2.71	2.98
2048	2.23	2.51	2.60	2.76	2.94
4096	2.26	2.55	2.62	3.05	2.99

Temperature Coefficients in Per Cent.

v	0–12.5°	12.5–25°	25–35°	35–50°	50–65°
32	3.04	2.42	1.94	1.83	1.46
128	3.02	2.52	1.95	1.81	1.48
512	2.95	2.60	1.95	1.73	1.48
1024	3.05	2.50	1.95	1.74	1.52
2048	3.04	2.48	1.96	1.67	1.47
4096	3.04	2.49	1.94	1.87	1.45

Potassium Sulphate (W and C.).

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 9.5°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
2	87.19	110.1	152.6	181.1	224.8	267.2
8	101.9	130.5	183.6	220.3	276.7	332.8
16	109.9	140.9	199.2	.....	.....	.....
32	117.9	151.5	214.4	259.7	329.2	400.0
128	131.9	170.3	242.1	296.9	376.0	456.2
512	142.7	184.0	263.5	319.6	406.7	500.7
1024	145.0	187.0	268.0	328.2	419.6	513.1

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 9.5°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
2	.....	.....	.....	.....	.....	.....
8	.....	.....	.....	.....	.....	.....
16	.....	.....	.....	.....	.....	.....
32	.....	.....	.....	.....	.....	.....
128	.....	.....	.....	.....	.....	.....
512	.....	.....	.....	.....	.....	.....
1024	.....	.....	.....	.....	.....	.....

Temperature Coefficients in Conductivity Units.

v	0–9.5°	9.5–25°	25–35°	35–50°	50–65°
2	2.41	2.74	2.85	2.91	2.83
8	3.01	3.43	3.67	3.76	3.74
16	3.26	3.76	.....	.....	.....
32	3.54	4.06	4.53	4.63	4.72
128	4.04	4.63	5.48	5.27	5.35
512	4.53	5.13	5.61	5.81	6.27
1024	4.42	5.23	6.02	6.09	6.23

Temperature Coefficients in Per Cent.

v	0–9.5°	9.5–25°	25–35°	35–50°	50–65°
2	2.76	2.49	1.87	1.61	1.26
8	2.95	2.63	2.00	1.71	1.35
16	2.97	2.67	.....	.....	.....
32	3.00	2.61	2.11	1.78	1.43
128	3.06	2.72	2.26	1.77	1.42
512	3.05	2.79	2.13	1.82	1.54
1024	3.05	2.79	2.25	1.86	1.48

Potassium Acid Sulphate (W.).

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 12.5°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
2	153.8	184.0	207.6	220.6	.....	.....
4	.....	.....	.....	.....	265.8	278.9
8	182.1	222.9	254.2	274.1	298.8	313.3
16	201.2	248.8	286.6	310.0	.....	.....
32	223.6	280.7	323.7	353.1	388.4	408.9
128	263.1	336.9	401.0	446.4	502.9	536.7
512	291.8	383.9	467.1	531.0	616.0	675.6
2048	290.9	385.8	478.2	556.6	675.0	747.0
8192	291.2	401.0	496.0	569.0	.....	.....

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 12.5°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
2	.....	.....	.....	.....	.....	.....
4	.....	.....	.....	.....	.....	.....
8	.....	.....	.....	.....	.....	.....
16	.....	.....	.....	.....	.....	.....
32	.....	.....	.....	.....	.....	.....
128	.....	.....	.....	.....	.....	.....
512	.....	.....	.....	.....	.....	.....
2048	.....	.....	.....	.....	.....	.....
8192	.....	.....	.....	.....	.....	.....

Temperature Coefficients in Conductivity Units.

v	0–12.5°	12.5–25°	25–35°	35–50°	50–65°
2	2.42	1.89	1.30	.....	.....
4	.....	.....	.....	.....	0.87
8	3.82	2.50	1.99	1.65	0.97
16	3.81	3.02	2.34	.....	.....
32	4.57	3.44	2.94	2.35	1.37
128	5.90	5.13	4.54	3.77	2.25
512	7.37	6.66	6.39	5.66	3.97
2048	7.59	7.39	7.84	7.89	4.80
8192	8.78	7.60	7.30	.....	.....

Temperature Coefficients in Per Cent.

v	0–12.5°	12.5–25°	25–35°	35–50°	50–65°
2	1.57	1.03	0.63	.....	.....
4	.....	.....	.....	.....	0.33
8	2.10	1.12	0.78	0.60	0.32
16	1.89	1.21	0.82	.....	.....
32	2.04	1.23	0.91	0.67	0.35
128	2.24	1.52	1.13	0.85	0.45
512	3.21	1.73	1.37	1.07	0.64
2048	2.61	1.92	1.64	1.42	0.71
8192	3.01	1.89	1.47	.....	.....

Potassium Carbonate (W. and Hw.).

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 17.8°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
2	84.34	129.2	150.1	158.35	199.34	228.63
8	98.74	154.1	180.9	191.45	237.57	291.17
16	105.3	166.5	195.3	216.87	278.66	341.86
32	112.9	179.6	210.5	228.87	296.51	369.42
128	122.3	197.6	233.6	263.89	340.18	424.50
512	131.2	211.1	250.1	284.36	378.64	468.12

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 17.8°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
2	64.3	61.2	60.0	55.7	52.6	48.8
8	75.3	73.0	72.3	67.3	62.7	62.3
16	80.3	78.9	78.1	76.3	73.6	73.0
32	86.0	85.1	84.2	80.5	78.3	78.9
128	93.2	93.6	93.4	92.8	89.8	90.7
512	100.0	100.0	100.0	100.0	100.0	100.0

Temperature Coefficients in Conductivity Units.

v	0–17.8°	17.8–25°	25–35°	35–50°	50–65°
2	2.52	2.90	.....	2.73	1.95
8	3.11	3.72	.....	3.07	2.57
16	3.44	4.00	.....	4.12	4.21
32	3.75	4.29	.....	4.51	4.86
128	4.23	5.00	.....	5.09	5.62
512	4.49	5.42	.....	6.29	5.89

Temperature Coefficients in Per Cent.

v	0–17.8°	17.8–25°	25–35°	35–50°	50–65°
2	2.99	2.24	.....	1.73	0.98
8	3.15	2.41	.....	1.60	1.08
16	3.26	2.40	.....	1.90	1.51
32	3.32	2.39	.....	1.97	1.64
128	3.46	2.53	.....	1.93	1.32
512	3.42	2.57	.....	2.21	1.26

Di-Potassium Acid Phosphate (Ws. and Hw.).

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 12.5°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
2	63.01	86.82	113.04	138.16	.....	.....
8	79.19	109.25	143.34	174.91	.....	.....
32	91.69	127.42	167.61	203.80	.....	.....
128	102.47	142.37	188.10	230.71	.....	.....
512	107.76	150.85	199.40	239.84	.....	.....
1024	109.35	152.23	200.52	242.65	.....	.....
2048	110.47	157.04	206.13	242.54	.....	.....
4096	107.16	154.98	201.98	250.78	.....	.....

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 12.5°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
2	57.0	55.3	54.8	55.1	.....	.....
8	71.7	69.6	69.5	69.8	.....	.....
32	83.0	81.1	81.3	81.3	.....	.....
128	92.8	90.7	91.3	92.0	.....	.....
512	97.6	96.1	96.7	95.7	.....	.....
1024	99.0	96.9	97.3	96.8	.....	.....
2048	100.0	100.0	100.0	96.7	.....	.....
4096	97.0	98.7	98.0	100.0	.....	.....

Temperature Coefficients in Conductivity Units.

v	0–12.5°	12.5–25°	25–35°	35–50°	50–65°
2	1.91	2.10	2.51	.....	.....
8	2.40	2.73	3.16	.....	.....
32	2.86	3.22	3.62	.....	.....
128	3.19	3.66	4.26	.....	.....
512	3.45	3.88	4.04	.....	.....
1024	3.43	3.85	4.21	.....	.....
2048	3.73	3.93	3.64	.....	.....
4096	3.83	3.76	4.88	.....	.....

Temperature Coefficients in Per Cent.

v	0–12.5°	12.5–25°	25–35°	35–50°	50–65°
2	3.03	2.42	2.22	.....	.....
8	3.03	2.50	2.21	.....	.....
32	3.05	2.53	2.16	.....	.....
128	3.11	2.57	2.27	.....	.....
512	3.20	2.57	2.03	.....	.....
1024	3.14	2.54	2.10	.....	.....
2048	3.38	2.50	1.77	.....	.....
4096	3.57	2.43	2.42	.....	.....

Potassium Phosphate (Sh.). (K_3PO_4)

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 12.5°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
8	116.6	163.8	217.2	263.6	334.5	415.5
32	144.1	206.7	280.3	344.2	453.6	566.1
128	178.9	207.7	348.2	425.2	552.2	685.7
512	193.7	274.7	366.1	442.8	574.6	707.6
1024	192.1	271.5	362.5	440.1	565.1	697.3
2048	190.0	268.3	359.3	437.2	549.5	676.2
4096	179.0	252.0	336.7	407.6	517.1	646.0

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 12.5°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
8	60.2	59.6	59.3	59.5	58.2	58.7
32	74.4	75.2	76.5	77.7	78.7	80.0
128	92.9	93.8	95.1	96.0	96.1	96.9
512	100.0	100.0	100.0	100.0	100.0	100.0
1024	99.2	98.8	99.0	99.3	98.3	98.5
2048	98.0	97.3	98.1	98.7	95.6	95.6

Temperature Coefficients in Conductivity Units.

v	0–12.5°	12.5–25°	25–35°	35–50°	50–65°
8	3.78	4.27	4.64	4.73	5.40
32	5.00	5.88	6.39	7.29	7.50
128	6.30	7.24	7.70	8.46	8.90
512	6.48	7.31	7.67	8.78	8.87
1024	6.35	7.28	7.76	8.33	8.81
2048	6.26	7.28	7.79	7.49	8.45
4096	5.84	6.78	7.09	7.30	8.65

Temperature Coefficients in Per Cent.

v	0–12.5°	12.5–25°	25–35°	35–50°	50–65°
8	3.24	2.60	2.13	1.79	1.61
32	3.54	2.85	2.24	2.04	1.65
128	3.50	2.81	2.21	1.99	1.61
512	3.34	2.66	2.10	1.98	1.54
1024	3.30	2.68	2.14	1.89	1.56
2048	3.29	2.75	2.14	1.71	1.53
4096	3.27	2.69	2.10	1.81	1.67

Potassium Sodium Sulphate (H. and Hw.).

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 12.5°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
4	88.4	122.5	159.0	189.6	225.23	272.73
8	96.1	146.6	170.6	209.1	251.17	305.40
32	113.0	158.1	207.2	249.7	301.65	367.39
128	128.8	179.0	236.1	284.5	345.97	424.23
512	135.6	189.6	250.8	301.0	375.47	455.59
1024	140.8	197.1	259.2	313.2	382.60	469.31
2048	140.9	198.2	261.4	316.2	395.50	489.05
4096	144.3	202.6	267.6	322.1	427.44	521.52

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 12.5°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
4	61.3	60.5	59.4	58.9	52.69	52.30
8	66.6	72.4	63.7	64.9	58.76	58.56
32	78.3	78.0	77.4	77.5	70.57	70.45
128	89.3	88.4	88.2	88.4	80.94	81.34
512	94.0	93.6	93.7	93.5	87.84	87.36
1024	97.6	97.3	96.7	97.3	89.51	89.99
2048	97.6	97.8	97.7	98.2	92.53	93.77
4096	100.0	100.0	100.0	100.0	100.00	100.00

Temperature Coefficients in Conductivity Units.

v	0–12.5°	12.5–25°	25–35°	35–50°	50–65°
4	2.73	2.92	3.06	.....	3.17
8	4.04	1.92	3.85	.....	3.61
32	3.68	3.93	4.25	.....	4.38
128	4.02	4.57	4.84	.....	5.22
512	4.32	4.90	5.02	.....	5.34
1024	4.50	4.97	5.40	.....	5.78
2048	4.58	5.06	5.48	.....	6.24
4096	4.66	5.20	5.45	.....	6.25

Temperature Coefficients in Per Cent.

v	0–12.5°	12.5–25°	25–35°	35–50°	50–65°
4	3.09	2.38	1.92	.....	1.41
8	4.30	1.30	1.79	.....	1.44
32	3.26	2.49	2.05	.....	1.45
128	3.12	2.55	2.05	.....	1.51
512	3.19	2.58	2.00	.....	1.42
1024	3.20	2.52	2.08	.....	1.51
2048	3.25	2.55	2.10	.....	1.58
4096	3.23	2.56	2.04	.....	1.46

Potassium Nickel Sulphate (H. and Hw.).

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 12.5°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
8	122.6	170.7	221.9	265.3	343.45	407.67
32	155.4	217.0	283.8	339.7	438.23	527.29
128	187.5	263.0	344.8	414.1	547.33	659.73
512	219.6	309.3	407.7	490.7	655.16	798.45
1024	235.5	331.2	437.1	527.1	695.98	850.20
2048	249.5	349.9	463.0	560.1	752.22	927.00
4090	268.0	367.9	487.4	588.1	785.94	960.54

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 12.5°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
8	47.0	46.4	45.5	45.1	43.70	42.44
32	59.6	59.0	58.2	57.8	55.76	54.90
128	71.9	71.5	70.7	70.4	69.64	68.68
512	84.2	84.1	83.6	83.4	83.36	83.13
1024	90.3	90.0	89.7	89.6	88.55	88.51
2048	95.7	95.1	95.0	95.2	95.71	96.51
4096	100.0	100.0	10.0	100.0	100.00	100.00

Temperature Coefficients in Conductivity Units.

v	0–12.5°	12.5–25°	25–35°	35–50°	50–65°
8	3.85	4.10	4.34	.....	4.28
32	4.93	5.32	5.59	.....	5.94
128	6.04	6.54	6.93	.....	7.49
512	7.18	7.87	8.30	.....	9.55
1024	7.66	8.47	9.00	.....	10.28
2048	8.03	9.05	9.71	.....	11.65
4096	8.57	9.56	10.07	.....	11.64

Temperature Coefficients in Per Cent.

v	0–12.5°	12.5–25°	25–35°	35–50°	50–65°
8	3.14	2.40	1.96	.....	1.25
32	3.17	2.45	1.97	.....	1.36
128	3.22	2.48	2.01	.....	1.37
512	3.27	2.54	2.04	.....	1.46
1024	3.25	2.56	2.06	.....	1.48
2048	3.22	2.59	2.09	.....	1.55
4096	3.29	2.60	2.07	.....	1.48

Potassium Chromium Sulphate (H. and Hw.). (Violet Variety.)

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 12.5°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
8	75.8	105.0	135.3	159.4	201.86	242.04
16	87.3	121.2	157.3	185.3	219.21	276.73
32	99.0	138.1	179.6	211.3	271.70	339.90
128	127.0	179.5	236.7	279.9	363.28	467.30
512	161.1	232.0	311.5	374.5	499.67	658.91
1024	186.6	271.6	369.6	443.8	586.07	785.37
2048	213.3	314.2	428.8	520.6	701.81	928.44
4096	245.8	364.8	500.1	613.9	818.02	1082.97

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 12.5°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
8	.....	.....	.....	.....	.....	.....
16	.....	.....	.....	.....	.....	.....
32	.....	.....	.....	.....	.....	.....
128	.....	.....	.....	.....	.....	.....
512	.....	.....	.....	.....	.....	.....
1024	.....	.....	.....	.....	.....	.....
2048	.....	.....	.....	.....	.....	.....
4096	.....	.....	.....	.....	.....	.....

Temperature Coefficients in Conductivity Units.

v	0–12.5°	12.5–25°	25–35°	35–50°	50–65°
8	2.34	2.42	2.41	2.83	2.68
16	2.71	2.89	2.80	2.26	3.83
32	3.13	3.32	3.17	4.03	4.55
128	4.20	4.58	4.32	5.56	6.93
512	5.67	6.36	6.30	8.35	10.62
1024	6.80	7.84	7.42	9.55	13.29
2048	8.07	9.17	9.18	12.08	15.11
4096	9.52	10.82	11.38	13.61	17.66

Temperature Coefficients in Per Cent.

v	0–12.5°	12.5–25°	25–35°	35–50°	50–65°
8	3.09	2.31	1.78	1.77	1.33
16	3.10	2.38	1.78	1.22	1.28
32	3.16	2.40	1.77	1.90	1.67
128	3.31	2.55	1.82	1.99	1.91
512	3.52	2.74	2.02	2.23	2.15
1024	3.64	2.89	2.01	2.15	2.27
2048	3.78	2.92	2.14	2.32	2.15
4096	3.87	2.97	2.28	2.22	2.16

Potassium Chromium Sulphate (H. and Hw.). (Green Variety.)

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 12.5°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
8	101.0	130.1	158.4	179.6	221.47	248.10
16	119.3	154.0	188.1	213.2	252.44	279.35
32	137.8	179.3	219.5	249.3	318.16	352.59
128	177.7	234.4	290.6	333.5	437.81	485.99
512	210.9	283.5	359.1	426.6	618.30	699.33
1024	229.7	310.9	399.6	479.0	658.54	771.94
2048	247.0	339.5	441.3	539.1	753.80	903.28
4096	273.1	379.4	500.3	616.2	848.62	1017.25

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 12.5°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
8	.....	.....	.....	.....	.....	.....
16	.....	.....	.....	.....	.....	.....
32	.....	.....	.....	.....	.....	.....
128	.....	.....	.....	.....	.....	.....
512	.....	.....	.....	.....	.....	.....
1024	.....	.....	.....	.....	.....	.....
2048	.....	.....	.....	.....	.....	.....
4096	.....	.....	.....	.....	.....	.....

Temperature Coefficients in Conductivity Units.

v	0–12.5°	12.5–25°	25–35°	35–50°	50–65°
8	2.33	2.26	2.12	.....	1.78
16	2.78	2.73	2.51	.....	1.79
32	3.32	3.22	2.98	.....	2.30
128	4.54	4.50	4.29	.....	3.21
512	5.81	6.05	6.75	.....	5.40
1024	6.50	7.10	7.94	.....	7.56
2048	7.40	8.14	9.78	.....	9.97
4096	8.50	9.67	11.59	.....	11.23

Temperature Coefficients in Per Cent.

v	0–12.5°	12.5–25°	25–35°	35–50°	50–65°
8	2.31	1.74	1.34	.....	0.80
16	2.33	1.77	1.33	.....	0.71
32	2.41	1.80	1.36	.....	0.72
128	2.55	1.92	1.48	.....	0.73
512	2.76	2.13	1.88	.....	0.87
1024	2.83	2.28	1.99	.....	1.15
2048	3.00	2.40	2.22	.....	1.32
4096	3.11	2.55	2.32	.....	1.32

Potassium Permanganate (Ws. and Hw.).

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 12.5°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
8	59.34	80.17	104.36	124.76	159.16	193.58
32	63.75	87.13	113.70	136.05	171.71	208.58
128	66.76	91.38	119.31	142.42	181.98	222.22
512	66.46	91.14	117.90	141.49	185.19	226.46
1024	64.65	89.05	113.95	137.09	182.45	215.95
2048	63.72	86.61	110.80	133.02	183.16	215.22
4096	62.64	87.94	111.80	133.97	178.59	205.22

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 12.5°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
8	88.8	87.7	87.5	87.6	85.94	85.48
32	95.4	95.3	95.3	95.5	92.72	92.10
128	100.0	100.0	100.0	100.0	98.27	98.13
512	99.5	99.7	98.8	99.4	100.00	100.00
1024	96.8	97.4	95.5	96.3	98.52	95.36
2048	95.4	94.8	92.9	93.4	98.90	95.04
4096	93.8	96.2	93.7	94.1	96.44	90.62

Temperature Coefficients in Conductivity Units.

v	0–12.5°	12.5–25°	25–35°	35–50°	50–65°
8	1.67	1.94	2.04	2.29	2.29
32	1.87	2.13	2.24	2.38	2.46
128	1.97	2.23	2.31	2.64	2.68
512	1.97	2.14	2.36	2.91	2.75
1024	1.95	1.99	2.31	3.02	2.23
2048	1.83	1.94	2.22	3.34	2.14
4096	2.02	1.91	2.22	2.97	1.78

Temperature Coefficients in Per Cent.

v	0–12.5°	12.5–25°	25–35°	35–50°	50–65°
8	2.81	2.42	1.96	1.84	1.44
32	2.93	2.45	1.97	1.75	1.43
128	2.95	2.44	1.94	1.85	1.47
512	2.96	2.35	2.00	2.06	1.48
1024	3.02	2.24	2.03	2.20	1.22
2048	2.87	2.24	2.00	2.51	1.17
4096	3.23	2.17	1.99	2.22	1.00

Potassium Chromate (J. and C.).

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 12.2°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
2	96.50	128.1	165.7	197.5	249.1	295.9
8	111.3	151.9	196.0	235.4	297.5	357.7
16	117.8	163.5	213.5	256.0	.....	.....
32	124.6	173.7	227.2	272.0	343.8	417.4
128	140.1	191.1	252.9	303.0	389.4	468.5
512	147.1	205.5	272.0	327.8	415.0	513.6
1024	150.1	209.2	276.2	330.2	.....	.....
2048	151.4	211.5	279.9	334.3	.....	.....

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 12.2°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
2	63.7	60.6	59.2	59.6	.....	.....
8	73.5	71.8	70.0	70.4	.....	.....
16	77.8	77.3	76.3	76.6	.....	.....
32	82.3	82.1	81.2	81.4	.....	.....
128	92.5	90.4	90.4	90.6	.....	.....
512	97.2	97.2	97.2	98.1	.....	.....
1024	99.1	98.9	98.7	98.8	.....	.....
2048	100.0	100.0	100.0	100.0	.....	.....

Temperature Coefficients in Conductivity Units.

v	0–12.2°	12.2–25°	25–35°	35–50°	50–65°
2	2.59	2.93	3.18	3.44	3.12
8	3.35	3.45	3.94	4.16	4.01
16	3.74	3.90	4.25	.....	.....
32	4.04	4.17	4.48	4.79	4.91
128	4.18	4.82	5.01	5.76	5.27
512	4.78	5.19	5.44	5.81	6.57
1024	4.84	5.23	5.40	.....	.....
2048	4.93	5.34	5.44	.....	.....

Temperature Coefficients in Per Cent.

v	0–12.2°	12.2–25°	25–35°	35–50°	50–65°
2	2.68	2.29	1.92	1.74	1.25
8	3.00	2.27	2.01	1.77	1.35
16	3.17	2.39	1.99	.....	.....
32	3.24	2.40	1.97	1.76	1.43
128	2.98	2.52	1.98	1.90	1.35
512	3.24	2.53	2.00	1.77	1.58
1024	3.22	2.50	1.96	.....	.....
2048	3.26	2.52	1.94	.....	.....

Potassium Dichromate (J. and W.).

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 12.6°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
4	.....	.....	.....	.....	272.1	326.9
8	109.1	150.8	195.5	234.0	292.4	352.9
16	116.6	161.5	209.3	248.8	.....	.....
32	122.6	168.8	219.4	260.9	327.3	396.9
128	129.9	178.8	231.5	277.3	346.0	417.9
512	133.0	182.5	237.3	281.2	351.7	426.8
1024	133.6	185.7	240.6	287.9	.....	.....
2048	136.8	188.8	245.5	293.6	366.4	448.9

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 12.6°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
4	.....	.....	.....	.....	74.3	72.8
8	79.8	79.9	79.6	79.6	79.8	78.6
16	85.2	85.5	85.3	84.7	.....	.....
32	89.6	89.4	89.4	88.9	89.3	88.4
128	95.0	94.7	94.3	94.4	94.4	93.1
512	97.2	96.7	96.7	95.8	96.0	95.1
1024	97.7	98.4	98.0	98.1	.....	.....
2048	100.0	100.0	100.0	100.0	100.0	100.0

Temperature Coefficients in Conductivity Units.

v	0–12.6°	12.6–25°	25–35°	35–50°	50–65°
4	.....	.....	.....	.....	3.65
8	3.31	3.60	3.85	3.89	4.03
16	3.56	3.85	3.95	.....	.....
32	3.66	4.08	4.15	4.43	4.64
128	3.88	4.25	4.39	4.58	4.79
512	3.93	4.42	4.45	4.70	5.01
1024	4.13	4.43	4.73	.....	.....
2048	4.13	4.57	4.81	4.85	5.50

Temperature Coefficients in Per Cent.

v	0–12.6°	12.6–25°	25–35°	35–50°	50–65°
4	.....	.....	.....	.....	1.34
8	3.03	2.19	1.97	1.58	1.37
16	3.05	2.38	1.89	.....	.....
32	2.98	2.42	1.89	1.70	1.42
128	2.99	2.38	1.90	1.65	1.38
512	2.95	2.42	1.88	1.67	1.42
1024	3.09	2.39	1.97	.....	.....
2048	3.02	2.42	1.96	1.65	1.50

Potassium Ferrocyanide (W.).

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 13.1°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
4	162.1	224.1	287.1	341.8	414.5	495.6
8	168.8	236.8	305.1	364.5	450.6	543.0
16	179.9	255.0	327.1	394.1	.....	.....
32	195.6	277.0	357.8	430.7	535.0	651.0
128	236.1	335.5	432.8	523.8	663.1	808.3
512	280.7	399.4	516.6	627.0	818.7	1006.3
1024	295.1	421.4	546.5	660.0	.....	.....
2048	315.0	449.0	578.0	703.0	915.4	1121.3
8192	328.0	467.0	599.0	724.0	941.9	1153.2

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 13.1°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
4	49.4	48.0	47.9	47.2	44.0	43.0
8	51.5	50.7	50.9	50.3	47.8	47.1
16	54.8	54.6	54.6	54.4	.....	.....
32	59.6	59.3	59.7	59.5	56.8	56.4
128	72.0	71.8	72.3	72.3	70.4	70.1
512	85.6	85.5	86.2	86.6	86.9	87.2
1024	90.0	90.2	91.2	91.2	.....	.....
2048	96.0	96.1	96.4	97.1	97.2	97.2
8192	100.0	100.0	100.0	100.0	100.0	100.0

Temperature Coefficients in Conductivity Units.

v	0–13.1°	13.1–25°	25–35°	35–50°	50–65°
4	4.73	5.29	5.47	4.85	5.41
8	5.19	5.74	5.94	5.74	6.16
16	5.73	6.06	6.70	.....	.....
32	6.21	6.79	7.29	6.95	7.73
128	7.59	8.18	9.10	9.29	9.68
512	9.06	9.75	11.04	12.78	12.51
1024	9.64	10.51	11.35	.....	.....
2048	10.23	10.84	12.50	14.16	13.73
8192	10.61	11.09	12.50	14.60	14.08

Temperature Coefficients in Per Cent.

v	0–13.1°	13.1–25°	25–35°	35–50°	50–65°
4	2.91	2.36	1.91	1.42	1.30
8	3.08	2.42	1.62	1.58	1.36
16	3.19	2.38	2.05	.....	.....
32	3.17	2.45	2.04	1.61	1.44
128	3.21	2.44	2.10	1.77	1.46
512	3.22	2.47	2.14	2.04	1.53
1024	3.27	2.49	2.08	.....	.....
2048	3.24	2.41	2.16	2.01	1.50
8192	3.23	2.37	2.09	2.01	1.50

Potassium Aluminium Sulphate (H.).

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 12.5°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
4	.....	.....	.....	142.3	172.5	196.1
8	78.9	108.9	140.3	165.3	207.5	240.6
32	101.2	140.8	182.2	215.7	255.1	317.4
128	127.6	177.7	232.9	283.7	356.9	426.2
512	158.8	223.7	294.9	358.3	446.9	557.1
1024	177.8	250.5	332.7	402.8	.....	.....
2048	197.5	281.8	378.4	470.0	626.4	769.4
4096	218.8	314.7	425.5	528.8	.....	.....

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 12.5°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
4	.....	.....	.....	.....	.....	.....
8	.....	.....	.....	.....	.....	.....
32	.....	.....	.....	.....	.....	.....
128	.....	.....	.....	.....	.....	.....
512	.....	.....	.....	.....	.....	.....
1024	.....	.....	.....	.....	.....	.....
2048	.....	.....	.....	.....	.....	.....
4096	.....	.....	.....	.....	.....	.....

Temperature Coefficients in Conductivity Units.

v	0–12.5°	12.5–25°	25–35°	35–50°	50–65°
4	.....	.....	.....	2.01	1.57
8	2.40	2.51	2.50	2.81	2.21
32	3.17	3.31	3.35	2.63	4.15
128	4.01	4.42	5.08	4.88	4.62
512	5.19	5.69	6.34	5.91	7.35
1024	5.81	6.57	7.01	.....	.....
2048	6.74	7.73	9.16	10.42	11.33
4096	7.67	8.86	10.33	.....	.....

Temperature Coefficients in Per Cent.

v	0–12.5°	12.5–25°	25–35°	35–50°	50–65°
4	.....	.....	.....	1.41	0.87
8	3.04	2.30	1.78	1.70	1.06
32	3.13	2.35	1.84	1.22	1.63
128	3.14	2.49	2.18	1.72	1.29
512	3.27	2.54	2.15	1.65	1.64
1024	3.27	2.62	2.11	.....	.....
2048	3.41	2.74	2.42	2.22	1.81
4096	3.51	2.82	2.43	.....	.....

Potassium Acetate (Ws. and C.).

Molecular Conductiivty.

v	$\mu_v 0°$	$\mu_v 12.5°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
4	46.13	62.62	83.35	99.88	129.2	157.4
8	48.60	67.11	88.43	105.77	.....	.....
16	.....	.....	.....	.....	144.6	177.1
32	53.09	73.59	97.29	117.46	.....	.....
64	.....	.....	.....	.....	155.0	190.4
128	55.57	77.43	102.13	123.03	.....	.....
256	.....	.....	.....	.....	162.3	199.7
512	57.17	79.91	105.16	126.87	.....	.....
1024	58.33	81.14	106.84	129.09	165.1	203.7
2048	59.24	82.09	108.43	129.84	166.7	210.8
4096	59.06	81.89	108.65	129.90	.....	.....

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 12.5°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
4	77.8	76.3	76.6	76.9	77.5	74.7
8	82.0	81.8	81.3	81.5	.....	.....
16	.....	.....	.....	.....	86.7	84.0
32	89.6	89.7	89.5	90.4	.....	.....
64	.....	.....	.....	.....	93.0	90.3
128	93.7	94.4	93.9	94.7	.....	.....
256	.....	.....	.....	.....	97.4	94.7
512	96.4	97.4	96.7	97.6	.....	.....
1024	98.4	98.9	98.3	99.3	99.0	96.6
2048	100.0	100.0	99.7	99.9	100.0	100.0
4096	99.6	99.8	100.0	100.0	.....	.....

Temperature Coefficients in Conductivity Units.

v	0–12.5°	12.5–25°	25–35°	35–50°	50–65°
4	1.32	1.66	1.65	1.95	1.88
8	1.48	1.71	1.74	.....	.....
16	.....	.....	.....	.....	2.17
32	1.64	1.90	2.02	.....	.....
64	.....	.....	.....	.....	2.36
128	1.75	1.98	2.09	.....	.....
256	.....	.....	.....	.....	2.49
512	1.82	2.02	2.17	.....	.....
1024	1.83	2.06	2.23	2.40	2.57
2048	1.83	2.11	2.14	2.46	2.94
4096	1.83	2.14	2.13	.....	.....

Temperature Coefficients in Per Cent.

v	0–12.5°	12.5–25°	25–35°	35–50°	50–65°
4	2.86	2.64	1.98	1.95	1.46
8	3.05	2.55	1.97	.....	.....
16	.....	.....	.....	.....	1.50
32	3.09	2.58	2.07	.....	.....
64	.....	.....	.....	.....	.....
128	3.15	2.54	2.05	.....	1.52
256	.....	.....	.....	.....	1.53
512	3.17	2.53	2.06	.....	.....
1024	3.14	2.54	2.09	1.86	1.56
2048	3.09	2.57	1.97	1.90	1.76
4096	3.10	2.61	1.96	.....	.....

Potassium Sulphocyanate (J. and C.).

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 13.5°$	$\mu_v 25°$	$\mu_v 30°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
2	57.75	79.47	100.0	110.2	.....	.....	.....
4	.....	.....	.....	.....	127.6	160.2	191.1
8	62.48	87.87	110.9	121.9	132.9	166.7	201.8
16	64.26	90.81	115.4	126.8	.....	.....	.....
32	65.99	93.39	118.7	130.8	142.3	179.6	219.6
128	70.70	100.1	127.3	139.4	149.3	190.0	232.4
512	71.28	101.2	129.8	142.3	153.7	192.6	239.3
1024	72.25	102.6	131.5	144.3	.....	.....	.....
2048	72.86	103.0	133.7	147.3	161.2	206.4	250.9

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 13.5°$	$\alpha 25°$	$\alpha 30°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
2	79.3	77.2	74.8	74.8	.....	.....	.....
4	.....	.....	.....	.....	79.2	77.6	76.2
8	85.8	85.3	83.0	82.8	82.4	80.8	80.4
16	88.2	88.2	86.3	86.1	.....	.....	.....
32	90.6	90.7	88.8	88.8	88.3	87.0	87.5
128	97.0	97.2	95.2	94.6	92.6	92.1	92.6
512	97.8	98.3	97.1	96.6	95.4	93.3	95.4
1024	99.2	99.6	98.4	98.0	.....	.....	.....
2048	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Temperature Coefficients in Conductivity Units.

v	0–13.5°	13.5–25°	25–30°	30–35°	35–50°	50–65°
2	1.31	1.78	2.04	.....	.....	.....
4	.....	.....	.....	.....	2.17	2.06
8	1.88	2.00	2.20	2.20	2.25	2.34
16	1.97	2.14	2.28	.....	.....	.....
32	2.04	2.18	2.41	2.42	2.49	2.67
128	2.18	2.38	2.42	1.99	2.74	2.83
512	2.23	2.46	2.50	2.28	2.60	3.11
1024	2.26	2.49	2.56	.....	.....	.....
2048	2.24	2.60	2.72	2.78	3.01	2.97

Temperature Coefficients in Per Cent.

v	0–13.5°	13.5–25°	25–30°	30–35°	35–50°	50–65°
2	2.27	2.24	2.04	.....	.....	.....
4	.....	.....	.....	.....	1.70	1.29
8	3.00	2.28	1.98	1.80	1.69	1.40
16	3.07	2.36	1.98	.....	.....	.....
32	3.09	2.33	2.03	1.85	1.75	1.49
128	3.08	2.38	1.90	1.43	1.84	1.49
512	3.13	2.43	1.93	1.60	1.69	1.62
1024	3.13	2.43	1.95	.....	.....	.....
2048	3.07	2.52	2.03	1.89	1.86	1.44

Ammonium Chloride (W. and C.).

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 14.5°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
2	62.76	89.86	109.2	129.9	161.4	194.0
8	66.17	96.11	118.6	142.8	179.4	217.1
16	68.02	99.26	123.2	148.2	.....	.....
32	70.20	102.4	127.6	153.7	194.0	235.9
128	73.08	107.6	133.4	161.4	206.2	251.1
512	74.39	109.8	136.8	165.4	211.4	259.5
1024	74.84	110.5	137.8	167.2	214.4	269.7
2048	.....	.....	.....	.....	218.3	265.4

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 14.5°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
2	84.0	81.3	79.2	77.7	73.9	73.1
8	88.4	87.0	86.1	85.4	82.2	81.8
16	90.8	89.8	89.4	88.6	.....	.....
32	93.8	92.7	92.6	91.9	88.9	88.9
128	97.6	97.4	96.8	96.5	94.4	94.6
512	99.4	99.4	99.3	98.9	96.8	97.8
1024	100.0	100.0	100.0	100.0	98.2	.....
2048	.....	.....	.....	.....	100.0	100.0

Temperature Coefficients in Conductivity Units.

v	0–14.5°	14.5–25°	25–35°	35–50°	50–65°
2	1.87	1.84	2.07	2.10	2.17
8	2.06	2.14	2.42	2.44	2.51
16	2.15	2.28	2.50	.....	.....
32	2.22	2.40	2.61	2.69	2.79
128	2.38	2.46	2.80	2.99	2.99
512	2.44	2.57	2.86	3.07	3.21
1024	2.46	2.60	2.94	3.15	3.69
2048	.....	.....	.....	.....	3.14

Temperature Coefficients in Per Cent.

v	0–14.5°	14.5–25°	25–35°	35–50°	50–65°
2	2.98	2.05	1.90	1.61	1.34
8	3.11	2.23	2.02	1.71	1.40
16	3.16	2.30	2.02	.....	.....
32	3.16	2.34	2.04	1.75	1.44
128	3.26	2.29	2.10	1.85	1.45
512	3.29	2.34	2.09	1.86	1.52
1024	3.29	2.35	2.13	1.89	1.72
2048	.....	.....	.....	.....	1.44

Ammonium Bromide (W.).

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 12.5°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
2	67.26	89.81	115.1	136.7	.....	.....
4	.....	.....	.....	.....	174.2	210.6
8	69.36	95.44	123.6	146.8	182.2	220.9
16	71.53	98.06	127.4	153.3	.....	.....
32	73.50	101.1	131.7	158.0	196.3	239.3
128	76.18	105.5	137.9	165.0	206.2	250.9
512	77.55	107.8	141.3	168.9	213.7	259.8
1024	77.06	107.5	140.9	169.5	221.0	267.6

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 12.5°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
2	87.3	83.5	81.7	80.6	.....	.....
4	.....	.....	.....	.....	78.8	78.7
8	90.0	88.8	87.7	86.6	82.4	82.5
16	92.8	91.2	90.4	90.4	.....	.....
32	95.4	94.1	93.5	93.2	88.8	89.4
128	98.9	98.1	97.9	97.3	93.3	93.7
512	100.0	100.0	100.0	99.6	96.7	97.0
1024	100.0	100.0	100.0	100.0	100.0	100.0

Temperature Coefficients in Conductivity Units.

v	0–12.5°	12.5–25°	25–35°	35–50°	50–65°
2	1.80	2.02	2.16	.....	.....
4	.....	.....	.....	.....	2.43
8	2.09	2.25	2.32	2.36	2.58
16	2.12	2.35	2.59	.....	.....
32	2.21	2.45	2.63	2.55	2.87
128	2.35	2.59	2.71	2.75	2.98
512	2.42	2.68	2.76	2.99	3.08
1024	2.43	2.67	2.86	3.43	3.11

Temperature Coefficients in Per Cent.

v	0–12.5°	12.5–25°	25–35°	35–50°	50–65°
2	2.68	2.25	1.88	.....	.....
4	.....	.....	.....	.....	1.39
8	3.01	2.36	1.88	1.61	1.42
16	2.96	2.40	2.03	.....	.....
32	3.01	2.42	2.00	1.61	1.46
128	3.08	2.46	1.98	1.67	1.45
512	3.12	2.49	1.85	1.77	1.44
1024	3.16	2.49	2.03	2.02	1.41

Tetraethyl Ammonium Iodide (Sh.).

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 12.5°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
8	38.6	54.6	72.8	88.5	.....	.....
32	46.5	65.4	86.8	105.0	.....	.....
128	51.1	72.1	95.4	114.8	.....	.....
512	52.8	73.9	98.0	118.4	.....	.....
1024	53.3	75.2	99.3	119.7	.....	.....
2048	54.4	77.0	101.7	122.5	.....	.....
4096	54.0	76.5	101.6	122.9	.....	.....

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 12.5°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
8	69.6	70.9	71.6	72.0	.....	.....
32	83.9	84.9	85.3	85.4	.....	.....
128	92.2	92.3	93.7	93.4	.....	.....
512	95.3	94.6	96.3	96.3	.....	.....
1024	96.2	96.2	97.6	97.5	.....	.....
2048	100.0	100.0	100.0	99.7	.....	.....
4096	98.7	98.0	99.9	100.0	.....	.....

Temperature Coefficients in Conductivity Units.

v	0–12.5°	12.5–25°	25–35°	35–50°	50–65°
8	1.28	1.46	1.57	.....	.....
32	1.51	1.70	1.82	.....	.....
128	1.67	1.86	1.94	.....	.....
512	1.69	1.92	2.04	.....	.....
1024	1.76	1.93	2.04	.....	.....
2048	1.78	1.98	2.08	.....	.....
4096	1.80	2.00	2.12	.....	.....

Temperature Coefficients in Per Cent.

v	0–12.5°	12.5–25°	25–35°	35–50°	50–65°
8	3.31	2.67	2.15	.....	.....
32	3.25	2.60	2.09	.....	.....
128	3.29	2.56	2.03	.....	.....
512	3.20	2.59	2.08	.....	.....
1024	3.20	2.58	2.07	.....	.....
2048	3.27	2.57	2.04	.....	.....
4096	3.32	2.61	2.08	.....	.....

Ammonium Nitrate (Ws. and C.).

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 12.5°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
2	58.44	78.92	101.51	119.48	148.9	179.8
8	64.35	84.25	113.58	135.07	169.3	204.3
32	68.81	94.30	123.13	146.53	184.2	223.0
128	71.64	98.45	128.44	152.92	195.2	237.5
512	73.63	101.39	132.64	157.48	201.4	246.3
1024	74.69	102.51	134.43	159.44	203.7	249.3
2048	75.25	103.39	134.79	160.39	205.3	251.6
4096	76.37	105.51	137.87	163.62	.....	.....

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 12.5°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
2	76.5	74.8	73.6	73.0	72.5	71.5
8	84.2	79.9	82.2	82.6	82.5	81.2
32	90.1	89.4	89.3	90.0	89.7	88.6
128	93.8	93.3	93.2	93.5	95.1	94.4
512	96.4	96.1	96.2	96.3	98.1	97.9
1024	97.8	97.2	97.5	97.5	99.2	99.1
2048	98.5	98.0	97.8	98.0	100.0	100.0
4096	100.0	100.0	100.0	100.0	.....	.....

Temperature Coefficients in Conductivity Units.

v	0–12.5°	12.5–25°	25–35°	35–50°	50–65°
2	1.64	1.81	1.80	1.96	2.06
8	1.59	2.33	2.17	2.28	2.33
32	2.04	2.31	2.34	2.51	2.59
128	2.15	2.40	2.45	2.82	2.82
512	2.22	2.50	2.48	2.95	2.99
1024	2.23	2.55	2.50	2.95	3.04
2048	2.25	2.52	2.56	2.99	3.09
4096	2.33	2.59	2.58	.....	.....

Temperature Coefficients in Per Cent.

v	0–12.5°	12.5–25°	25–35°	35–50°	50–65°
2	2.81	2.29	1.77	1.64	1.38
8	2.47	2.77	1.91	1.69	1.38
32	2.97	2.45	1.90	1.71	1.41
128	3.00	2.44	1.91	1.84	1.44
512	3.02	2.47	1.86	1.87	1.48
1024	2.99	2.49	1.86	1.85	1.49
2048	2.99	2.44	1.90	1.86	1.51
4096	3.05	2.46	1.87	.....	.....

Ammonium Sulphate (Ws. and C.).

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 12.5°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
2	82.37	112.09	145.09	170.72	215.8	257.6
8	98.06	136.28	179.57	213.19	270.8	325.2
32	115.27	160.26	210.98	254.86	324.3	393.3
128	130.95	182.65	241.38	291.69	375.8	461.7
512	139.69	195.77	259.21	313.00	417.0	506.5
1024	143.84	202.31	267.62	322.55	.....	.....
2048	150.62	209.74	275.96	337.47	428.4	528.2
4096	150.44	211.55	280.82	340.32	440.0	538.6

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 12.5°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
2	54.6	52.9	51.6	50.1	.....	.....
8	65.0	64.4	63.9	62.6	.....	.....
32	76.5	75.7	75.1	74.8	.....	.....
128	86.9	86.3	85.9	85.7	.....	.....
512	92.7	92.5	92.3	91.9	.....	.....
1024	95.4	95.6	95.2	94.7	.....	.....
2048	100.0	99.1	98.2	99.1	.....	.....
4096	99.8	100.0	100.0	100.0	.....	.....

Temperature Coefficients in Conductivity Units.

v	0–12.5°	12.5–25°	25–35°	35–50°	50–65°
2	2.38	2.64	2.56	.....	2.79
8	3.06	3.46	3.36	.....	3.63
32	3.60	4.06	4.39	.....	4.60
128	4.14	4.70	5.03	.....	5.73
512	4.49	5.08	5.38	.....	5.97
1024	4.68	5.22	5.49	.....	.....
2048	4.73	5.30	6.15	.....	6.65
4096	4.89	5.54	5.95	.....	6.57

Temperature Coefficients in Per Cent.

v	0–12.5°	12.5–25°	25–35°	35–50°	50–65°
2	2.89	2.36	1.76	.....	1.29
8	3.12	2.54	1.87	.....	1.34
32	3.12	2.53	2.08	.....	1.42
128	3.16	2.57	2.08	.....	1.52
512	3.21	2.60	2.08	.....	1.43
1024	3.25	2.58	2.05	.....	.....
2048	3.14	2.53	2.23	.....	1.55
4096	3.25	2.58	2.12	.....	1.49

Ammonium Acid Sulphate (Ws. and Sh.).

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 12.5°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
2	155.26	186.49	211.99	226.06	223.8	235.3
8	183.40	223.84	258.00	277.18	286.0	303.2
32	223.58	279.55	322.68	349.24	374.2	396.5
128	265.24	339.00	404.14	444.74	485.9	525.3
512	289.79	378.25	463.20	522.24	593.5	666.1
1024	295.22	386.88	483.51	547.05	647.1	794.5
2048	303.41	400.01	496.86	573.46	681.5	820.6
4096	304.26	401.96	497.11	576.66	712.5	855.2

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 12.5°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
2	51.0	46.4	42.7	39.2	31.4	27.5
8	60.3	55.7	51.9	48.1	40.1	35.5
32	73.5	69.6	65.0	60.6	52.5	46.4
128	87.1	84.4	81.3	77.1	68.2	61.4
512	95.2	94.2	93.2	90.5	83.3	77.9
1024	97.0	96.3	97.4	94.9	90.8	93.0
2048	99.7	99.6	99.9	99.4	95.6	96.0
4096	100.0	100.0	100.0	100.0	100.0	100.0

Temperature Coefficients in Conductivity Units.

v	0–12.5°	12.5–25°	25–35°	35–50°	50–65°
2	2.50	2.04	1.41	.....	0.77
8	4.04	2.73	1.91	.....	1.15
32	4.48	3.45	2.66	.....	1.49
128	5.90	5.21	4.06	.....	2.63
512	7.08	6.79	5.90	.....	4.84
1024	7.33	7.73	6.35	.....	9.83
2048	7.73	7.74	7.66	.....	9.27
4096	7.81	7.61	7.96	.....	8.85

Temperature Coefficients in Per Cent.

v	0–12.5°	12.5–25°	25–35°	35–50°	50–65°
2	1.61	1.09	0.66	.....	0.34
8	2.20	1.22	0.74	.....	0.40
32	2.00	1.23	0.82	.....	0.40
128	2.22	1.54	1.01	.....	0.54
512	2.44	1.80	1.27	.....	0.82
1024	2.48	2.00	1.31	.....	1.52
2048	2.55	1.94	1.54	.....	1.36
4096	2.57	1.89	1.60	.....	1.23

Ammonium Aluminium Sulphate (H.).

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 12.5°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
8	80.0	110.9	143.1	168.8	203.5	236.5
16	.....	.....	.....	202.3	247.5	288.0
32	102.5	143.1	185.5	220.4	.....	.....
64	.....	.....	.....	261.5	325.8	384.8
128	130.1	182.7	238.8	284.8	347.5	426.3
512	162.2	230.9	304.5	365.9	477.5	573.5
1024	181.0	257.5	342.4	415.1	.....	.....
2048	201.8	288.2	386.4	485.8	643.1	831.5
4096	224.2	322.8	437.6	540.3	.....	.....

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 12.5°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
8	.....	.....	.....	.....	.....	.....
16	.....	.....	.....	.....	.....	.....
32	.....	.....	.....	.....	.....	.....
64	.....	.....	.....	.....	.....	.....
128	.....	.....	.....	.....	.....	.....
512	.....	.....	.....	.....	.....	.....
1024	.....	.....	.....	.....	.....	.....
2048	.....	.....	.....	.....	.....	.....
4096	.....	.....	.....	.....	.....	.....

Temperature Coefficients in Conductivity Units.

v	0–12.5°	12.5–25°	25–35°	35–50°	50–65°
8	2.47	2.58	2.57	2.31	2.20
16	.....	.....	.....	.....	.....
32	3.25	3.39	3.49	3.01	2.70
64	.....	.....	.....	4.29	3.93
128	4.21	4.49	4.60	4.18	5.25
512	5.50	5.89	6.14	7.44	6.40
1024	6.12	6.79	7.27	.....	.....
2048	6.91	7.86	9.94	10.49	12.56
4096	7.90	8.38	10.27	.....	.....

Temperature Coefficients in Per Cent.

v	0–12.5°	12.5–25°	25–35°	35–50°	50–65°
8	3.09	2.33	1.80	1.37	1.08
16	.....	.....	.....	.....	.....
32	3.17	2.37	1.88	1.48	1.09
64	.....	.....	.....	1.64	1.21
128	3.24	2.46	1.93	1.47	1.51
512	3.39	2.55	2.02	2.03	1.34
1024	3.38	2.64	2.12	.....	.....
2048	3.42	2.73	2.57	2.16	1.95
4096	3.53	2.60	2.35	.....	.....

Ammonium Chromium Sulphate (H. and Hw.).

(Violet).

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 12.5°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
8	77.5	106.4	137.3	162.7	204.92	244.97
16	88.9	123.2	159.5	188.3	239.15	288.79
32	100.8	140.3	182.2	216.0	274.46	333.50
128	129.5	183.0	240.2	285.9	369.58	459.09
512	165.5	238.0	321.0	385.9	508.79	648.99
1024	187.0	272.0	372.0	455.7	604.32	754.79
2048	211.9	310.7	428.5	530.0	713.72	897.35
4096	240.7	355.6	492.2	617.0	853.42	1050.26

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 12.5°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
8	.....	.....	.....	.....	.....	.....
16	.....	.....	.....	.....	.....	.....
32	.....	.....	.....	.....	.....	.....
128	.....	.....	.....	.....	.....	.....
512	.....	.....	.....	.....	.....	.....
1024	.....	.....	.....	.....	.....	.....
2048	.....	.....	.....	.....	.....	.....
4096	.....	.....	.....	.....	.....	.....

Temperature Coefficients in Conductivity Units.

v	0–12.5°	12.5–25°	25–35°	35–50°	50–65°
8	2.31	2.47	2.54	.....	2.67
16	2.74	2.90	2.88	.....	3.31
32	3.16	3.35	2.38	.....	3.94
128	4.28	4.57	4.57	.....	5.90
512	5.80	6.64	6.49	.....	9.35
1024	6.80	8.00	8.37	.....	10.03
2048	7.90	9.40	10.15	.....	12.24
4096	9.19	10.93	12.48	.....	13.12

Temperature Coefficients in Per Cent.

v	0–12.5°	12.5–25°	25–35°	35–50°	50–65°
8	2.98	2.32	1.85	.....	1.30
16	3.08	2.35	1.81	.....	1.38
32	3.14	2.39	1.86	.....	1.44
128	3.31	2.50	1.90	.....	1.60
512	3.51	2.79	2.02	.....	1.84
1024	3.64	2.94	2.25	.....	1.66
2048	3.73	3.03	2.37	.....	1.71
4096	3.82	3.07	2.54	.....	1.54

Ammonium Chromium Sulphate (H. and Hw.).

(Green).

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 12.5°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
8	103.6	133.2	162.9	185.3	223.33	250.70
16	119.7	155.4	190.6	219.3	268.08	299.59
32	136.4	178.2	220.8	255.1	316.57	352.20
128	172.3	228.4	288.1	336.4	436.52	489.76
512	202.6	274.4	355.7	423.2	585.31	673.80
1024	215.6	294.2	386.2	471.2	658.87	789.57
2048	222.0	313.5	414.0	518.4	757.75	924.29
4096	234.4	328.4	458.1	593.8	868.79	1061.73

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 12.5°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
8	.....	.....	.....	.....	.....	.....
16	.....	.....	.....	.....	.....	.....
32	.....	.....	.....	.....	.....	.....
128	.....	.....	.....	.....	.....	.....
512	.....	.....	.....	.....	.....	.....
1024	.....	.....	.....	.....	.....	.....
2048	.....	.....	.....	.....	.....	.....
4096	.....	.....	.....	.....	.....	.....

Temperature Coefficients in Conductivity Units.

v	0–12.5°	12.5–25°	25–35°	35–50°	50–65°
8	2.37	2.38	2.24	.....	1.82
16	2.70	2.82	2.87	.....	2.10
32	3.34	3.41	3.43	.....	2.38
128	4.49	4.78	4.83	.....	3.55
512	5.74	6.50	6.75	.....	5.90
1024	6.29	7.36	8.50	.....	8.71
2048	7.32	8.04	10.44	.....	11.10
4096	7.52	10.38	13.57	.....	12.56

Temperature Coefficients in Per Cent.

v	0–12.5°	12.5–25°	25–35°	35–50°	50–65°
8	2.29	1.79	1.38	.....	0.81
16	2.26	1.82	1.51	.....	0.78
32	2.45	1.91	1.55	.....	0.75
128	2.61	2.09	1.68	.....	0.81
512	2.83	2.37	1.90	.....	1.01
1024	2.92	2.50	2.20	.....	1.32
2048	3.37	2.57	2.52	.....	1.46
4096	3.21	3.16	2.96	.....	1.48

Ammonium Copper Sulphate (H. and Hw.).

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 12.5°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
4	106.3	146.6	190.4	225.7	278.3	334.7
8	122.7	169.9	220.7	262.2	323.5	383.1
32	153.5	213.8	280.2	334.3	417.5	496.9
128	187.8	262.4	346.7	412.6	521.1	630.1
512	221.6	312.1	411.7	495.7	634.0	768.9
1024	236.0	333.5	442.6	532.5	697.8	850.8
2048	246.4	347.9	463.6	560.0	744.1	916.2
4096	259.4	367.3	494.0	597.3	788.3	976.8

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 12.5°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
4	.....	.....	.....	.....	.....	.....
8	.....	.....	.....	.....	.....	.....
32	.....	.....	.....	.....	.....	.....
128	.....	.....	.....	.....	.....	.....
512	.....	.....	.....	.....	.....	.....
1024	.....	.....	.....	.....	.....	.....
2048	.....	.....	.....	.....	.....	.....
4096	.....	.....	.....	.....	.....	.....

Temperature Coefficients in Conductivity Units.

v	0–12.5°	12.5–25°	25–35°	35–50°	50–65°
4	3.22	3.50	3.53	.....	3.76
8	3.78	4.06	4.15	.....	3.97
32	4.82	5.31	5.41	.....	5.29
128	5.97	6.74	6.59	.....	7.27
512	7.24	7.97	8.40	.....	8.99
1024	7.80	8.73	8.99	.....	10.20
2048	8.12	9.26	9.64	.....	11.47
4096	8.63	10.14	10.33	.....	12.57

Temperature Coefficients in Per Cent.

v	0–12.5°	12.5–25°	25–35°	35–50°	50–65°
4	3.03	2.39	1.85	.....	1.35
8	3.08	2.39	1.88	.....	1.23
32	3.14	2.48	1.93	.....	1.26
128	3.18	2.57	1.90	.....	1.39
512	3.27	2.55	2.04	.....	1.42
1024	3.31	2.62	2.03	.....	1.46
2048	3.30	2.66	2.08	.....	1.54
4096	3.33	2.76	2.09	.....	1.59

Calcium Chloride (Sh. and H.).

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 12.5°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
2	80.5	109.6	142.1	169.1	.....	.....
4	.....	.....	.....	.....	237.7	290.4
8	95.3	132.1	172.5	207.4	258.5	318.7
32	106.4	149.3	197.5	238.0	306.5	378.5
128	117.8	165.6	219.2	265.8	340.8	418.9
512	124.0	174.8	232.4	281.9	362.4	452.5
1024	126.5	179.0	236.1	284.6	.....	.....
2048	131.4	185.0	245.0	298.3	382.0	474.8
4096	131.4	185.2	246.5	300.0	.....	.....

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 12.5°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
2	61.2	59.1	57.6	56.3	.....	.....
4	.....	.....	.....	.....	62.2	61.2
8	72.5	71.3	69.9	69.1	67.7	67.1
32	80.9	80.6	80.1	79.3	80.2	79.7
128	89.6	89.4	88.9	88.6	89.2	88.2
512	94.3	94.2	94.6	93.9	94.9	95.3
1024	96.2	96.1	95.7	94.8	.....	.....
2048	100.0	100.0	99.3	99.4	100.0	100.0
4096	99.9	99.9	100.0	100.0	.....	.....

Temperature Coefficients in Conductivity Units.

v	0–12.5°	12.5–25°	25–35°	35–50°	50–65°
2	2.32	2.60	2.70	.....	.....
4	.....	.....	.....	.....	1.71
8	2.94	3.23	3.49	3.41	1.62
32	3.43	3.85	4.05	4.57	1.78
128	3.82	4.29	4.66	5.00	1.84
512	4.06	4.57	4.94	5.37	1.86
1024	4.20	4.70	4.85	.....	.....
2048	4.28	4.80	5.33	5.58	1.88
4096	4.31	4.90	5.35	.....	.....

Temperature Coefficients in Per Cent.

v	0–12.5°	12.5–25°	25–35°	35–50°	50–65°
2	2.90	2.46	1.90	.....	.....
4	.....	.....	.....	.....	1.48
8	3.08	2.44	2.02	1.64	1.55
32	3.21	2.58	2.05	1.92	1.57
128	3.24	2.58	2.12	1.89	1.53
512	3.27	2.61	2.12	1.90	1.66
1024	3.39	2.68	2.05	.....	.....
2048	3.02	2.58	2.17	1.87	1.62
4096	3.26	2.59	2.17	.....	.....

Calcium Bromide (W. and Hw.).

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 14.4°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
2	85.95	122.7	151.0	181.1	220.00	262.05
8	97.74	144.0	177.5	214.8	278.91	339.40
16	103.0	150.5	188.4	227.6	296.41	362.30
32	108.2	158.4	199.0	240.5	318.70	391.68
128	117.3	173.3	217.9	265.0	350.57	431.83
512	122.9	182.0	229.7	278.5	375.49	458.67
1024	126.3	186.9	236.5	286.5	386.64	477.18
2048	126.8	188.2	239.5	291.5	390.98	487.30

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 14.4°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
2	67.7	65.2	63.1	62.1	56.3	53.8
8	77.1	76.5	74.1	73.7	71.3	69.6
16	81.2	80.0	78.7	78.1	75.8	74.4
32	85.3	84.2	83.1	82.5	81.5	80.4
128	92.5	92.1	91.0	90.9	89.7	88.6
512	96.9	96.7	95.9	95.5	96.0	94.1
1024	99.6	99.3	98.7	98.3	98.9	97.9
2048	100.0	100.0	100.0	100.0	100.0	100.0

Temperature Coefficients in Conductivity Units.

v	0–14.4°	14.4–25°	25–35°	35–50°	50–65°
2	2.55	2.67	3.01	.....	2.84
8	3.21	3.16	3.73	.....	4.03
16	3.30	3.58	3.92	.....	4.39
32	3.49	3.83	4.15	.....	4.86
128	3.89	4.21	4.71	.....	5.42
512	4.10	4.50	4.88	.....	5.54
1024	4.21	4.68	5.00	.....	6.03
2048	4.26	4.84	5.20	.....	6.42

Temperature Coefficients in Per Cent.

v	0–14.4°	14.4–25°	25–35°	35–50°	50–65°
2	2.97	2.18	1.99	.....	1.30
8	3.28	2.19	2.10	.....	1.44
16	3.20	2.37	2.08	.....	1.48
32	3.23	2.42	2.09	.....	1.52
128	3.32	2.43	2.16	.....	1.55
512	3.34	2.47	2.13	.....	1.48
1024	3.33	2.50	2.11	.....	1.56
2048	3.36	2.57	2.17	.....	1.64

Calcium Nitrate (J. and W.).

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 9.7°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
2	65.84	85.83	121.0	145.0	.....	.....
4	.....	.....	.....	.....	212.6	258.1
8	85.50	112.8	157.3	188.2	237.9	287.8
16	94.95	123.9	174.2	209.8	.....	.....
32	102.3	133.5	187.7	225.6	285.6	350.6
128	114.5	151.0	212.0	255.4	323.1	397.7
512	122.6	160.6	226.7	274.2	349.4	432.5
1024	125.7	164.2	235.0	282.9	.....	.....
2048	130.0	171.4	242.7	292.4	371.8	458.3

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 9.7°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
2	50.7	50.1	49.9	49.6	.....	.....
4	.....	.....	.....	.....	57.2	56.3
8	65.8	65.8	64.8	64.4	64.0	62.8
16	73.0	72.3	71.8	71.8	.....	.....
32	78.7	77.9	77.3	77.2	76.8	76.5
128	88.1	88.1	87.4	87.4	86.9	86.8
512	94.3	93.7	93.4	93.8	94.0	94.4
1024	96.7	95.8	96.8	96.8	.....	.....
2048	100.0	100.0	100.0	100.0	100.0	100.0

Temperature Coefficients in Conductivity Units.

v	0–9.7°	9.7–25°	25–35°	35–50°	50–65°
2	2.04	2.31	2.40	.....	.....
4	.....	.....	.....	.....	3.03
8	2.81	2.91	3.09	3.31	3.33
16	2.98	3.29	3.56	.....	.....
32	3.22	3.54	3.79	4.00	4.33
128	3.76	3.99	4.34	4.51	4.97
512	3.92	4.32	4.75	5.01	5.54
1024	4.01	4.60	4.79	.....	.....
2048	4.31	4.64	4.97	5.30	5.77

Temperature Coefficients in Per Cent.

v	0–9.7°	9.7–25°	25–35°	35–50°	50–65°
2	3.10	2.69	1.98	.....	.....
4	.....	.....	.....	.....	1.42
8	3.29	2.58	1.96	1.76	1.39
16	3.14	2.82	2.04	.....	.....
32	3.15	2.62	2.02	1.77	1.51
128	3.28	2.64	2.05	1.76	1.53
512	3.19	2.69	2.10	1.83	1.58
1024	3.19	2.80	2.04	.....	.....
2048	3.32	2.71	2.05	1.81	1.55

Calcium Chromate (H. and Hw.).

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 12.5°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
8	57.7	80.9	105.8	125.4	158.03	187.81
16	64.6	90.4	118.5	140.9	180.62	214.73
32	72.2	101.4	133.1	158.2	204.40	243.98
128	91.2	126.9	167.5	200.8	261.25	315.84
512	106.7	150.0	198.7	239.5	315.98	387.01
1024	111.6	157.3	208.8	253.3	332.29	401.22
2048	114.4	160.8	214.0	264.0	344.41	418.31
4096	116.1	162.5	216.1	261.6	340.24	419.18

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 12.5°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
8	49.7	49.8	49.0	47.9	45.88	44.80
16	55.6	55.6	54.8	53.9	52.44	51.23
32	62.2	62.4	61.6	60.5	59.35	58.20
128	78.5	78.1	77.5	76.8	75.85	75.35
512	91.9	92.3	91.9	91.5	91.75	92.33
1024	96.1	96.8	96.6	96.8	96.48	95.72
2048	98.5	98.9	99.0	100.0	100.00	99.79
4096	100.0	100.0	100.0	.....	98.79	100.00

Temperature Coefficients in Conductivity Units.

v	0–12.5°	12.5–25°	25–35°	35–50°	50–65°
8	1.85	1.99	1.96	.....	1.99
16	2.06	2.25	2.24	.....	2.27
32	2.33	2.54	2.51	.....	2.64
128	2.86	3.25	3.33	.....	3.64
512	3.46	3.90	4.08	.....	4.74
1024	3.66	4.12	4.45	.....	4.60
2048	3.71	4.26	5.00	.....	4.93
4096	3.71	4.29	4.55	.....	5.26

Temperature Coefficients in Per Cent.

v	0–12.5°	12.5–25°	25–35°	35–50°	50–65°
8	3.21	2.46	1.85	.....	1.26
16	3.19	2.49	1.89	.....	1.26
32	3.23	2.51	1.89	.....	1.29
128	3.14	2.56	1.99	.....	1.39
512	3.24	2.60	2.05	.....	1.50
1024	3.28	2.62	2.13	.....	1.38
2048	3.24	2.65	2.34	.....	1.43
4096	3.20	2.64	2.11	.....	1.55

Calcium Formate (H. and W.).

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 12.5°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
4	58.4	81.7	107.1	128.6	161.3	195.2
8	67.2	94.4	124.5	149.7	190.0	230.8
32	81.4	115.3	153.1	184.7	235.5	287.8
128	92.2	131.2	174.3	211.6	268.6	331.5
512	95.7	135.5	181.9	223.5	283.2	349.6
2048	101.4	144.6	190.4	230.6	286.6	358.2
4096	101.3	145.4	190.6	229.2	.....	.....

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 12.5°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
4	57.6	56.2	56.2	56.1	56.3	54.5
8	66.3	64.9	65.3	65.3	66.3	64.4
32	80.4	79.3	80.3	80.6	82.2	80.3
128	91.0	90.2	91.5	92.3	93.7	92.5
512	94.5	93.2	95.4	97.5	98.8	97.6
2048	100.0	99.5	99.9	100.0	100.0	100.0
4096	100.0	100.0	100.0	100.0	100.0	100.0

Temperature Coefficients in Conductivity Units.

v	0–12.5°	12.5–25°	25–35°	35–50°	50–65°
4	1.86	2.03	2.15	2.18	2.26
8	2.18	2.41	2.52	2.69	2.72
32	2.70	3.02	3.16	3.39	3.49
128	3.12	3.45	3.73	3.80	4.13
512	3.18	3.71	4.16	4.00	4.43
2048	3.46	3.66	4.02	.....	4.77
4096	3.53	3.62	3.86	.....	.....

Temperature Coefficients in Per Cent.

v	0–12.5°	12.5–25°	25–35°	35–50°	50–65°
4	3.19	2.49	2.01	1.69	1.40
8	3.24	2.55	2.02	1.80	1.43
32	3.32	2.62	2.06	1.84	1.48
128	3.38	2.63	2.14	1.79	1.54
512	3.32	2.74	2.29	1.79	1.56
2048	3.41	2.53	2.11	.....	1.66
4096	3.48	2.49	2.03	.....	.....

Strontium Chloride (J. and Sh.).

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 9.9°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
2	81.36	106.2	141.5	172.0	.....	.....
8	92.97	124.3	173.7	207.4	265.6	324.4
16	101.1	134.5	187.7	225.9	285.6	350.2
32	106.3	141.5	198.4	238.7	305.7	377.5
128	118.5	157.6	225.0	271.6	342.4	424.6
512	125.0	166.1	236.7	285.4	367.7	453.9
1024	129.1	171.4	242.8	294.1	373.0	463.3
2048	133.9	176.1	248.7	300.3	383.2	476.5
4096	133.3	176.0	248.6	(303.9)	392.2	486.9

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 9.9°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
2	60.8	60.3	56.9	57.3	.....	.....
8	69.5	70.6	69.8	69.1	67.7	66.6
16	75.5	76.4	75.5	75.2	72.8	71.9
32	79.4	80.4	79.8	79.5	77.9	77.5
128	88.5	89.5	90.5	90.5	87.3	87.2
512	93.4	94.3	95.2	95.0	93.7	93.2
1024	96.4	97.3	97.6	97.9	95.1	95.2
2048	100.0	100.0	100.0	100.0	97.7	97.8
4096	100.0	100.0	100.0	100.0	100.0	100.0

Temperature Coefficients in Conductivity Units.

v	0–9.9°	9.9–25°	25–35°	35–50°	50–65°
2	2.51	2.34	3.05	.....	.....
8	3.16	3.27	3.37	.....	3.92
16	3.38	3.52	3.82	.....	4.25
32	3.56	3.90	4.03	.....	4.79
128	3.96	4.46	4.66	.....	5.48
512	4.15	4.67	4.87	.....	5.75
1024	4.27	4.73	5.13	.....	6.02
2048	4.27	4.81	5.16	.....	6.22
4096	4.31	4.81	5.31	.....	6.32

Temperature Coefficients in Per Cent.

v	0–9.9°	9.9–25°	25–35°	35–50°	50–65°
2	3.03	2.20	2.16	.....	.....
8	3.39	2.63	1.94	.....	1.48
16	3.34	2.62	2.03	.....	1.49
32	3.35	2.76	2.03	.....	1.56
128	3.34	2.83	2.07	.....	1.60
512	3.32	2.81	2.06	.....	1.57
1024	3.31	2.76	2.11	.....	1.62
2048	3.22	2.73	2.07	.....	1.62
4096	3.23	2.73	2.14	.....	1.61

Strontium Bromide (W.).

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 13.5°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
2	88.03	122.1	153.8	183.1	.....	.....
4	.....	.....	.....	.....	256.3	312.7
8	100.0	141.8	180.6	217.2	282.5	343.7
16	103.7	148.1	190.0	228.1	.....	.....
32	110.0	157.2	202.2	243.9	316.9	388.7
128	171.8	170.6	219.1	267.1	356.2	437.6
512	128.8	185.4	239.1	289.9	380.3	470.1
1024	129.1	186.6	239.6	292.3	.....	.....
2048	.....	.....	.....	.....	405.9	501.0

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 13.5°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
2	68.2	65.4	64.2	62.6	.....	.....
4	.....	.....	.....	.....	63.1	62.4
8	77.5	76.0	75.4	74.3	69.6	68.6
16	80.3	79.4	79.3	78.0	.....	.....
32	85.2	84.2	84.4	83.4	78.1	77.6
128	91.2	91.4	91.4	91.4	87.7	87.3
512	99.8	99.4	99.8	99.2	93.7	93.8
1024	100.0	100.0	100.0	100.0	.....	.....
2048	.....	.....	.....	.....	100.0	100.0

Temperature Coefficients in Conductivity Units.

v	0–13.5°	13.5–25°	25–35°	35–50°	50–65°
2	2.52	2.76	2.93	.....	.....
4	.....	.....	.....	.....	3.76
8	3.10	3.37	3.66	.....	4.08
16	3.29	3.64	3.81	.....	.....
32	3.50	3.91	4.17	.....	4.79
128	3.91	4.22	4.80	.....	5.43
512	4.19	4.67	5.08	.....	5.99
1024	4.26	4.61	5.27	.....	.....
2048	.....	.....	.....	.....	6.34

Temperature Coefficients in Per Cent.

v	0–13.5°	13.5–25°	25–35°	35–50°	50–65°
2	2.86	2.26	1.91	.....	.....
4	.....	.....	.....	.....	1.46
8	3.10	2.38	2.03	.....	1.44
16	3.17	2.46	2.01	.....	.....
32	3.18	2.49	2.06	.....	1.51
128	3.32	2.17	2.19	.....	1.52
512	3.25	2.52	2.13	.....	1.57
1024	3.30	2.47	2.20	.....	1.50
2048	.....	.....	.....	.....	.....

Strontium Nitrate (J. and W.).

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 10°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
2	63.24	81.25	112.4	135.4	.....	.....
4	.....	.....	.....	.....	206.1	253.7
8	84.33	112.8	154.1	181.7	234.3	288.0
16	93.33	124.8	171.4	205.7	.....	.....
32	100.7	133.3	185.3	223.5	284.2	354.4
128	114.8	151.4	211.2	254.0	322.5	400.7
512	122.5	161.6	227.1	273.5	351.7	441.0
1024	126.9	167.0	233.7	282.3	.....	.....
2048	131.3	171.9	238.6	287.5	369.3	460.9

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 10°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
2	48.2	47.3	47 1	47.1	.....	.....
4	.....	.....	.....	.....	55.8	55.0
8	64.2	65.5	64.6	63.2	63.4	62.5
16	71.1	72.6	71.8	71.5	.....	.....
32	77.7	77.5	77.7	77.7	76.9	76.9
128	87.4	88.1	88.5	88.4	87.3	86.9
512	93.3	94.0	95.2	95.1	92.2	95.7
1024	96.7	97.2	97.9	98.2	.....	.....
2048	100.0	100.0	100.0	100.0	100.0	100.0

Temperature Coefficients in Conductivity Units.

v	0–10°	10–25°	25–35°	35–50°	50–65°
2	1.80	2.07	2.30	.....	.....
4	.....	.....	.....	.....	3.17
8	2.85	2.75	2.76	3.51	3.58
16	3.14	3.11	3.43	.....	.....
32	3.26	3.47	3.82	4.05	4.68
128	3.66	3.99	4.28	4.57	5.21
512	3.91	4.37	4.64	5.21	5.95
1024	4.01	4.45	4.86	.....	.....
2048	4.06	4.45	4.89	5.45	6.11

Temperature Coefficients in Per Cent.

v	0–10°	10–25°	25–35°	35–50°	50–65°
2	2.85	2.55	2.05	.....	.....
4	.....	.....	.....	.....	1.54
8	3.38	2.44	1.79	.....	1.53
16	3.36	2.49	2.00	.....	.....
32	3.24	2.60	2.06	1.81	1.65
128	3.19	2.63	2.03	1.80	1.62
512	3.19	2.70	2.04	1.90	1.69
1024	3.16	2.66	2.08	.....	.....
2048	3.16	2.59	2.05	1.90	1.65

Strontium Acetate (Ws. and W.).

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 12.5°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
2	34.94	49.26	66.52	81.11	.....	.....
4	.....	.....	.....	.....	132.4	160.9
8	56.51	80.19	106.96	129.99	153.7	193.8
32	70.69	100.20	135.25	164.88	207.7	256.5
128	81.89	117.19	157.69	193.44	244.3	305.0
512	88.50	128.09	170.16	209.22	267.0	336.6
1024	91.18	131.09	177.44	218.24	.....	.....
2048	97.30	139.01	180.07	219.77	279.9	354.2
4096	97.89	139.60	184.44	224.75	.....	.....

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 12.5°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
2	35.7	35.3	36.1	36.1	.....	.....
4	.....	.....	.....	.....	47.3	45.4
8	57.7	57.4	58.0	57.8	54.9	54.7
32	72.2	71.8	73.4	73.4	74.2	72.4
128	83.6	83.9	85.5	86.1	87.3	86.1
512	90.4	91.7	92.3	93.1	95.4	95.0
1024	93.1	93.9	96.4	97.1	.....	.....
2048	99.3	99.6	97.7	97.8	100.0	100.0
4096	100.0	100.0	100.0	100.0	.....	.....

Temperature Coefficients in Conductivity Units.

v	0–12.5°	12.5–25°	25–35°	35–50°	50–65°
2	1.15	1.38	1.46	.....	.....
4	.....	.....	.....	.....	1.80
8	1.89	2.14	2.30	.....	2.67
32	2.36	2.80	2.96	2.86	3.25
128	2.82	3.24	3.58	3.39	4.05
512	3.17	3.37	3.91	3.85	4.64
1024	3.19	3.70	4.08	.....	.....
2048	3.34	3.28	3.97	4.01	4.95
4096	3.34	3.59	4.03	.....	.....

Temperature Coefficients in Per Cent.

v	0–12.5°	12.5–25°	25–35°	35–50°	50–65°
2	3.29	2.80	2.20	.....	.....
4	.....	.....	.....	.....	1.43
8	3.35	2.67	2.15	.....	1.73
32	3.34	2.79	2.19	1.73	1.56
128	3.44	2.77	2.27	1.75	1.66
512	3.58	2.63	2.30	1.84	1.74
1024	3.50	2.82	2.30	.....	.....
2048	3.43	2.36	2.21	1.83	1.77
4096	3.41	2.57	2.19	.....	.....

Barium Chloride (W. and C.).

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 4.6°$	$\mu_v 16.5°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
2	86.62	96.61	128.2	150.0	178.6	220.6	259.8
8	99.06	112.3	151.1	179.0	215.3	272.4	322.3
16	105.2	119.5	161.2	191.6	230.4	.....	.....
32	.....	.....	.....	.....	.....	313.9	375.3
64	116.2	132.4	180.2	215.2	260.3	.....	.....
128	.....	.....	.....	.....	.....	348.7	421.5
256	125.1	142.7	194.7	232.9	282.6	.....	.....
512	126.5	144.3	197.2	235.5	286.2	378.0	453.8
1024	130.9	149.3	203.8	243.4	296.4	.....	.....
2048	132.7	151.2	206.3	247.1	300.5	395.0	478.0

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 4.6°$	$\alpha 16.5°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
2	65.3	63.9	62.1	60.7	59.4	.....	.....
8	74.6	74.3	73.2	72.4	71.6	.....	.....
16	79.3	79.0	78.1	77.5	76.6	.....	.....
32	.....	.....	.....	.....	.....	.....	.....
64	87.6	87.6	87.3	87.1	86.6	.....	.....
128	.....	.....	.....	.....	.....	.....	.....
256	94.3	94.4	94.4	94.3	94.0	.....	.....
512	95.3	95.4	95.6	95.3	95.2	.....	.....
1024	98.6	98.7	98.8	98.5	98.6	.....	.....
2048	100.0	100.0	100.0	100.0	100.0	.....	.....

Temperature Coefficients in Conductivity Units.

v	0–4.6°	4.6–16.5°	16.5–25°	25–35°	35–50°	50–65°
2	2.17	2.66	2.56	2.86	.....	2.61
8	2.88	3.26	3.28	3.63	.....	3.33
16	3.11	3.50	3.58	3.88	.....	.....
32	.....	.....	.....	.....	.....	4.09
64	3.52	4.02	4.12	4.51	.....	.....
128	.....	.....	.....	.....	.....	4.85
256	3.83	4.36	4.49	4.97	.....	.....
512	3.87	4.45	4.51	5.07	.....	5.05
1024	4.00	4.57	4.66	5.30	.....	.....
2048	4.02	4.63	4.80	5.34	.....	5.53

Temperature Coefficients in Per Cent.

v	0–4.6°	4.6–16.5°	16.5–25°	25–35°	35–50°	50–65°
2	2.51	2.75	2.00	1.91	.....	1.18
8	2.91	2.90	2.17	2.02	.....	1.22
16	2.96	2.93	2.22	2.03	.....	1.30
32	.....	.....	.....	.....	.....	.....
64	3.03	3.04	2.29	2.10	.....	1.39
128	.....	.....	.....	.....	.....	.....
256	3.06	3.06	2.30	2.13	.....	.....
512	3.06	3.08	2.29	2.19	.....	1.34
1024	3.05	3.06	2.28	2.18	.....	.....
2048	3.03	3.06	2.33	2.16	.....	1.40

Barium Bromide (J. and Sh.).

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 10°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
2	91.81	119.3	158.6	188.1	.....	.....
8	103.4	137.0	187.4	224.0	280.1	340.1
16	109.3	144.8	198.9	238.8	301.1	367.6
32	114.4	151.0	209.4	251.4	320.2	392.8
128	123.6	163.7	228.5	274.4	358.0	439.2
512	131.8	175.5	246.8	298.2	379.6	467.6
1024	133.8	177.2	249.9	301.6	385.3	475.1
2048	134.2	178.7	252.6	305.7	393.9	484.6
4096	.....	.....	.....	.....	404.5	497.2

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 10°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
2	68.4	66.8	62.8	61.5	.....	.....
8	77.1	76.7	74.2	73.3	69.2	68.4
16	81.5	81.0	78.7	78.1	74.4	73.9
32	85.3	84.5	82.9	82.2	79.1	79.0
128	92.1	91.6	90.5	89.8	88.5	83.3
512	98.2	98.2	97.7	97.6	93.8	94.0
1024	99.7	99.2	98.9	98.7	95.2	95.5
2048	100.0	100.0	100.0	100.0	97.4	97.4
4096	.....	.....	.....	.....	100.0	100.0

Temperature Coefficients in Conductivity Units.

v	0–10°	10–25°	25–35°	35–50°	50–65°
2	2.74	2.62	2.95	.....	.....
8	3.36	3.36	3.66	.....	4.00
16	3.55	3.60	3.99	.....	4.43
32	3.66	3.89	4.20	.....	4.84
128	4.01	4.32	4.59	.....	5.41
512	4.37	4.75	5.14	.....	5.87
1024	4.34	4.85	5.18	.....	5.99
2048	4.45	4.93	5.24	.....	6.05
4096	.....	.....	.....	.....	6.18

Temperature Coefficients in Per Cent.

v	0–10°	10–25°	25–35°	35–50°	50–65°
2	2.98	2.20	1.86	.....	.....
8	3.25	2.45	1.95	.....	1.42
16	3.25	2.49	2.01	.....	1.47
32	3.20	2.58	2.01	.....	1.51
128	3.24	2.64	2.01	.....	1.51
512	3.32	2.71	2.08	.....	1.54
1024	3.24	2.74	2.07	.....	1.55
2048	3.32	2.76	2.07	.....	1.54
4096	.....	.....	.....	.....	1.53

Barium Nitrate (J. and C.).

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 10°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
8	76.37	103.0	146.4	177.3	226.1	276.2
16	88.29	117.6	165.2	200.1	.....	.....
32	97.62	129.8	183.2	219.8	282.0	334.2
128	114.4	150.8	210.0	251.8	325.5	398.3
512	124.3	163.8	229.2	275.2	360.7	440.7
1024	127.4	167.8	234.2	281.6	.....	.....
2048	131.4	171.6	239.8	288.8	378.4	467.0
4096	.....	.....	.....	.....	382.3	475.5

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 10°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
8	58.1	60.0	61.1	61.4	59.1	58.1
16	67.2	68.5	68.9	69.3	.....	.....
32	74.3	75.6	76.4	76.1	73.8	72.4
128	87.1	87.9	87.6	87.2	85.1	83.8
512	94.6	95.5	95.6	95.3	94.3	92.7
1024	97.0	97.8	97.7	97.5	.....	.....
2048	100.0	100.0	100.0	100.0	99.0	98.2
4096	.....	.....	.....	.....	100.0	100.0

Temperature Coefficients in Conductivity Units.

v	0–10°	10–25°	25–35°	35–50°	50–65°
8	2.66	2.89	3.09	3.25	3.34
16	2.93	3.17	3.49	.....	.....
32	3.22	3.56	3.66	4.16	4.15
128	3.64	3.95	4.18	4.91	4.85
512	3.95	4.36	4.60	5.70	5.33
1024	4.04	4.43	4.74	.....	.....
2048	4.02	4.55	4.90	5.99	5.91
4096	.....	.....	.....	5.23	6.21

Temperature Coefficients in Per Cent.

v	0–10°	10–25°	25–35°	35–50°	50–65°
8	3.48	2.81	2.11	1.83	1.48
16	3.32	2.70	2.11	.....	.....
32	3.30	2.74	2.00	1.90	1.47
128	3.18	2.62	1.99	1.95	1.49
512	3.18	2.66	2.01	2.07	1.48
1024	3.17	2.64	2.02	.....	.....
2048	3.06	2.65	2.04	2.07	1.56
4096	.....	.....	.....	.....	1.62

Barium Formate (J. and Sh.).

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 10°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
2	51.67	67.74	93.97	112.1	.....	.....
8	72.22	95.34	133.4	159.2	201.0	245.4
16	77.72	102.7	144.6	173.8	227.3	275.1
32	85.56	114.3	160.6	193.1	252.1	307.3
128	86.20	114.3	162.4	197.4	289.6	359.6
512	102.2	133.6	182.0	215.2	308.2	383.6
1024	103.0	135.0	184.0	226.2	313.2	385.5
2048	111.8	149.4	210.0	257.6	309.5	376.4

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 10°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
2	46.2	45.3	44.8	43.5	.....	.....
8	64.6	63.8	63.5	61.8	64.2	63.6
16	69.5	68.7	68.9	69.0	72.6	71.4
32	76.5	76.5	76.5	75.0	80.5	79.7
128	77.1	76.5	77.3	76.6	92.4	93.3
512	91.4	89.4	86.7	83.5	98.4	99.5
1024	92.1	90.3	87.7	87.8	100.0	100.0
2048	100.0	100.0	100.0	100.0	98.8	97.6

Temperature Coefficients in Conductivity Units.

v	0–10°	10–25°	25–35°	35–50°	50–65°
2	1.60	1.75	1.81	.....	.....
8	2.31	2.54	2.58	.....	2.96
16	2.49	2.79	2.92	.....	3.19
32	2.87	3.09	3.25	.....	3.68
128	2.81	3.27	3.50	.....	4.67
512	3.15	3.23	3.32	.....	5.03
1024	3.20	3.33	4.22	.....	4.82
2048	3.76	4.04	4.76	.....	4.46

Temperature Coefficients in Per Cent.

v	0–10°	10–25°	25–35°	35–50°	50–65°
2	3.10	2.58	1.93	.....	.....
8	3.20	2.66	1.93	.....	1.47
16	3.20	2.72	2.02	.....	1.43
32	3.35	2.70	2.02	.....	1.46
128	3.26	2.86	2.16	.....	1.61
512	3.08	2.41	1.82	.....	1.63
1024	3.10	2.46	2.29	.....	1.54
2048	3.36	2.70	2.27	.....	1.44

Barium Acetate (J.).

*Molecular Conductivity.**

v	$\mu_v 0°$	$\mu_v 10°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
2	40.16	53.25	76.18	89.95	.....	.....
8	59.05	79.46	113.3	136.0	.....	.....
16	65.68	87.10	124.3	149.3	.....	.....
32	72.93	97.58	139.5	168.6	.....	.....
128	78.15	104.5	149.0	181.2	.....	.....
512	90.75	123.1	176.9	215.8	.....	.....
1024	92.63	124.7	180.5	219.8	.....	.....
2048	95.96	129.3	186.3	226.7	.....	.....

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 10°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
2	41.9	4.12	40.9	39.7	.....	.....
8	63.0	61.5	60.8	60.0	.....	.....
16	68.4	67.4	66.7	66.0	.....	.....
32	76.0	75.5	74.9	74.4	.....	.....
128	81.4	80.8	80.0	79.9	.....	.....
512	94.6	95.2	95.0	95.2	.....	.....
1024	96.5	96.4	96.9	97.0	.....	.....
2048	100.0	100.0	100.0	100.0	.....	.....

Temperature Coefficients in Conductivity Units.

v	0–10°	10–25°	25–35°	35–50°	50–65°
2	1.30	1.52	1.37	.....	.....
8	2.04	2.26	2.27	.....	.....
16	2.14	2.48	2.52	.....	.....
32	2.40	2.79	2.91	.....	.....
128	2.63	2.97	3.22	.....	.....
512	3.23	2.59	3.89	.....	.....
1024	3.20	3.72	3.93	.....	.....
2048	3.33	3.80	4.04	.....	.....

Temperature Coefficients in Per Cent.

v	0–10°	10–25°	25–35°	35–50°	50–65°
2	3.24	2.85	1.80	.....	.....
8	3.45	2.84	2.00	.....	.....
16	3.26	2.85	2.03	.....	.....
32	3.38	2.86	2.09	.....	.....
128	3.37	2.84	2.16	.....	.....
512	3.06	2.91	2.20	.....	.....
1024	3.45	2.98	2.18	.....	.....
2048	3.47	2.93	2.17	.....	.....

Magnesium Chloride (Sh. and H.).

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 12.5°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
4	80.2	112.1	147.3	177.6	228.0	280.6
8	87.6	123.2	162.1	196.1	249.7	303.8
32	99.9	141.1	187.1	226.4	294.7	364.8
128	110.3	156.1	208.0	252.4	311.8	401.6
512	115.7	164.3	219.4	266.9	348.3	433.1
1024	118.3	168.4	224.9	272.2	.....	.....
2048	120.3	172.8	230.2	280.1	373.2	465.6
4096	123.5	176.3	234.7	285.2	.....	.....

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 12.5°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
4	64.9	63.6	62.8	62.3	61.1	60.3
8	70.9	69.9	69.1	68.8	66.9	65.3
32	80.9	80.0	79.7	79.4	79.0	78.4
128	89.2	88.6	88.6	88.5	83.5	86.3
512	93.7	93.1	93.5	93.3	93.3	93.0
1024	95.8	95.5	95.8	95.4	.....	.....
2048	97.3	98.0	98.1	98.2	100.0	100.0
4096	100.0	100.0	100.0	100.0	.....	.....

Temperature Coefficients in Conductivity Units.

v	0–12.5°	12.5–25°	25–35°	35–50°	50–65°
4	2.55	2.82	3.03	3.36	3.51
8	2.85	3.11	3.40	3.57	3.61
32	3.29	3.68	3.93	4.55	4.67
128	3.67	4.15	4.44	4.00	5.93
512	3.89	4.41	4.74	4.76	5.65
1024	4.02	4.52	4.72	.....	.....
2048	4.21	4.59	4.98	6.19	6.16
4096	4.22	4.67	5.05	.....	.....

Temperature Coefficients in Per Cent.

v	0–12.5°	12.5–25°	25–35°	35–50°	50–65°
4	3.17	2.51	2.05	1.90	1.54
8	3.25	2.52	2.09	1.82	1.45
32	3.29	2.60	2.10	2.01	1.58
128	3.33	2.65	2.13	1.58	1.90
512	3.36	2.67	2.16	1.78	1.62
1024	3.39	2.68	2.09	.....	.....
2048	3.48	2.65	2.16	2.21	1.65
4096	3.32	2.64	2.15	.....	.....

*Decomposed at higher temperatures.

Magnesium Bromide (Ws. and W.).

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 12.5°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
2	76.34	104.05	132.92	162.25	.....	.....
4	.....	.....	.....	.....	251.2	308.3
8	93.73	130.12	170.64	206.18	263.2	324.4
32	104.56	147.24	194.42	235.51	297.6	367.7
128	113.52	159.94	211.91	257.31	332.4	412.8
512	118.93	167.72	223.06	270.40	358.0	445.5
1024	122.80	173.39	230.94	279.38	.....	.....
2048	127.28	179.74	238.70	289.52	377.0	471.3
4096	130.91	185.06	244.94	305.94	.....	.....

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 12.5°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
2	58.3	56.2	54.3	53.0	.....	.....
4	.....	.....	.....	.....	66.6	65.4
8	71.6	70.3	69.7	67.4	69.8	68.8
32	79.9	79.5	79.4	76.9	78.9	78.0
128	86.8	86.4	86.5	84.1	88.2	87.6
512	90.9	90.6	91.1	88.3	95.0	94.5
1024	93.9	93.7	94.3	91.3	.....	.....
2048	97.3	97.1	97.5	94.6	100.0	100.0
4096	100.0	100.0	100.0	100.0	.....	.....

Temperature Coefficients in Conductivity Units.

v	0–12.5°	12.5–25°	25–35°	35–50°	50–60°
2	2.22	2.31	2.93	.....	.....
4	.....	.....	.....	.....	3.81
8	2.91	3.24	3.55	3.80	4.08
32	3.41	3.77	4.11	4.14	4.67
128	3.71	4.16	4.54	5.01	5.36
512	3.90	4.43	4.73	5.84	5.83
1024	4.05	4.60	4.84	.....	.....
2048	4.20	4.72	5.08	5.83	6.25
4096	4.33	4.79	6.10	.....	.....

Temperature Coefficients in Per Cent.

v	0–12.5°	12.5–25°	25–35°	35–50°	50–65°
2	2.91	2.22	2.20	.....	.....
4	.....	.....	.....	.....	1.41
8	3.11	2.49	2.08	1.84	1.46
32	3.26	2.56	2.11	1.76	1.54
128	3.27	2.60	2.14	1.95	1.57
512	3.28	2.64	2.12	2.16	1.56
1024	3.30	2.65	2.10	.....	.....
2048	3.30	2.63	2.13	2.08	1.59
4096	3.31	2.59	2.49	.....	.....

Magnesium Nitrate (Ws. and C.).

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 12.5°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
2	.....	.....	.....	.....	193.7	234.8
8	88.91	123.42	160.86	191.88	244.5	298.1
32	101.55	141.97	187.10	223.24	283.5	347.4
128	110.78	155.50	204.72	247.66	316.8	390.8
512	119.01	165.77	220.89	265.33	341.6	421.1
1024	120.68	170.27	224.49	272.30	.....	.....
2048	123.34	173.18	229.70	280.09	357.0	443.4
4096	122.89	173.70	229.58	277.54	.....	.....

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 12.5°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
2	.....	.....	.....	.....	.....	.....
8	72.1	71.1	70.0	68.5	.....	.....
32	82.4	81.7	81.5	79.7	.....	.....
128	89.9	89.5	89.1	88.4	.....	.....
512	96.5	95.4	96.2	94.7	.....	.....
1024	97.9	98.0	99.7	97.2	.....	.....
2048	100.0	99.7	100.0	100.0	.....	.....
4096	99.7	100.0	100.0	99.1	.....	.....

Temperature Coefficients in Conductivity Units.

v	0–12.5°	12.5–25°	25–35°	35–50°	50–65°
2	.....	.....	.....	.....	2.74
8	2.76	2.99	3.10	3.51	3.57
32	3.23	3.61	3.61	4.02	4.26
128	3.58	3.54	4.29	4.61	4.93
512	3.74	4.41	4.44	5.08	5.30
1024	3.97	4.34	4.78	.....	.....
2048	3.99	4.52	5.04	5.13	5.76
4096	4.06	4.47	4.80	.....	.....

Temperature Coefficients in Per Cent.

v	0–12.5°	12.5–25°	25–35°	35–50°	50–65°
2	.....	.....	.....	.....	1.41
8	3.10	2.42	1.93	1.83	1.46
32	3.18	2.54	1.93	1.83	1.50
128	3.23	2.28	2.10	1.87	1.56
512	3.14	2.66	2.01	1.91	1.55
1024	3.28	2.55	2.12	.....	.....
2048	3.23	2.61	2.11	1.83	1.61
4096	3.30	2.57	2.09	.....	.....

Magnesium Sulphate (J. and Sh.).

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 10°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
2	32.12	43.14	60.57	72.68	90.5	106.5
8	45.70	60.90	85.62	102.4	131.0	155.4
16	50.95	68.14	96.50	115.0	150.7	179.0
32	59.57	79.73	112.4	135.3	174.6	208.6
128	71.17	95.38	135.9	164.4	230.3	279.1
512	95.57	128.3	183.3	221.9	288.1	353.1
1024	102.7	138.4	198.3	240.9	317.7	395.4
2048	111.1	148.5	215.2	261.0	341.7	422.6

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 10°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
2	28.9	29.1	28.2	27.8	26.5	25.2
8	41.1	41.0	39.8	39.2	38.3	36.8
16	45.9	45.9	44.8	44.1	44.1	42.4
32	53.6	53.7	52.2	51.8	55.1	49.4
128	64.1	64.2	63.2	63.0	67.4	66.0
512	86.0	84.4	85.2	85.0	84.3	83.6
1024	92.4	93.2	92.3	92.3	93.0	93.6
2048	100.0	100.0	100.0	100.0	100.0	100.0

Temperature Coefficients in Conductivity Units.

v	0–10°	10–25°	25–35°	35–50°	50–65°
2	1.10	1.16	1.21	.....	1.07
8	1.52	1.65	1.67	.....	1.63
16	1.71	1.89	1.85	.....	1.89
32	2.01	2.18	2.29	.....	2.27
128	2.42	2.75	2.85	.....	3.25
512	3.27	3.73	3.86	.....	4.33
1024	3.57	3.99	4.26	.....	5.18
2048	3.74	4.45	4.58	.....	5.39

Temperature Coefficients in Per Cent.

v	0–10°	10–25°	25–35°	35–50°	50–65°
2	3.42	2.69	2.00	.....	1.18
8	3.33	2.71	1.95	.....	1.24
16	3.36	2.77	1.92	.....	1.27
32	3.37	2.73	2.04	.....	1.30
128	3.40	2.88	2.10	.....	1.41
512	3.42	2.91	2.11	.....	1.50
1024	3.48	2.88	2.15	.....	1.63
2048	3.37	2.99	2.22	.....	1.58

Magnesium Formate (Ws. and W.).

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 12.5°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
2	37.33	52.53	69.24	83.25	.....	.....
4	.....	.....	.....	.....	135.7	164.4
8	58.15	83.44	109.29	132.14	165.2	201.4
32	74.68	106.05	141.71	172.31	212.8	261.8
128	85.99	122.17	164.06	200.30	253.8	313.8
512	88.58	123.84	167.86	205.44	273.7	337.9
1024	94.03	133.87	176.23	209.90	.....	.....
2048	97.22	138.60	184.73	226.37	284.2	352.0
4096	97.18	138.74	182.91	223.19	.....	.....

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 12.5°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
2	38.4	37.9	37.5	36.8	.....	.....
4	.....	.....	.....	.....	47.7	46.7
8	59.8	60.1	59.2	58.4	58.1	57.2
32	76.8	76.4	76.7	76.1	74.9	74.4
128	88.4	88.1	88.8	88.5	89.3	89.1
512	91.1	89.3	90.9	90.7	96.3	96.0
1024	96.7	96.5	95.4	92.7	.....	.....
2048	99.9	99.9	100.0	100.0	100.0	100.0
4096	100.0	100.0	99.0	98.6	.....	.....

Temperature Coefficients in Conductivity Units.

v	0–12.5°	12.5–25°	25–35°	35–50°	50–65°
2	1.22	1.33	1.40	.....	.....
4	.....	.....	.....	.....	1.41
8	2.02	2.07	2.29	2.20	1.46
32	2.51	2.85	3.06	2.70	1.54
128	2.89	3.35	3.62	3.57	1.57
512	2.82	3.52	3.76	.....	1.56
1024	3.19	3.38	3.37	.....	.....
2048	3.31	3.69	4.16	3.85	1.59
4096	3.32	3.53	4.03	.....	.....

Temperature Coefficients in Per Cent.

v	0–12.5°	12.5–25°	25–35°	35–50°	50–65°
2	3.27	2.53	2.02	.....	.....
4	.....	.....	.....	.....	1.41
8	3.47	2.48	2.10	1.67	1.46
32	3.36	2.69	2.16	1.57	1.54
128	3.36	2.74	2.21	1.79	1.57
512	3.18	2.84	2.24	.....	1.56
1024	3.39	2.52	1.91	.....	1.59
2048	3.40	2.66	2.25	.....	.....
4096	3.42	2.54	2.20	.....	.....

Magnesium Acetate (Ws. and W.).

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 12.5°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
4	37.56	54.50	72.50	88.92	110.8	136.1
8	46.35	66.76	89.79	109.86	138.8	171.2
32	60.99	87.97	119.31	146.20	187.1	231.7
128	71.13	103.35	139.51	172.35	219.7	276.6
512	78.03	113.23	153.41	189.50	245.9	310.9
1024	80.38	116.73	158.95	201.71	.....	.....
2048	83.85	121.36	164.72	203.07	258.2	327.2
4096	84.99	121.76	165.58	203.70	.....	.....

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 12.5°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
4	44.2	44.8	43.8	43.7	42.9	41.6
8	56.6	54.8	54.3	53.9	53.8	52.3
32	71.8	72.2	72.1	71.8	72.4	70.8
128	83.7	84.9	84.3	84.6	85.1	84.5
512	91.9	93.0	92.8	93.0	95.2	95.0
1024	94.6	95.9	96.1	99.0	.....	.....
2048	98.7	99.7	99.6	99 7	100.0	100.0
4096	100.0	100.0	100.0	100.0	.....	.....

Temperature Coefficients in Conductivity Units.

v	0–12.5°	12.5–25°	25–35°	35–50°	50–65°
4	1.36	1.44	1.64	1.45	1.69
8	1.63	1.84	2.01	1.93	2.16
32	2.16	2.51	2.69	2.73	2.97
128	2.58	2.89	3.28	3.16	3.79
512	2.81	3.21	3.61	3.76	4.33
1024	2.91	3.38	4.28	.....	.....
2048	3.00	3.47	3.84	3.67	4.60
4096	2.94	3.49	3.83	.....	.....

Temperature Coefficients in Per Cent.

v	0–12.5°	12.5–25°	25–35°	35–50°	50–65°
4	3.62	2.64	2.26	1.63	1.52
8	3.52	2.76	2.24	1.74	1.56
32	3.54	2.85	2.25	1.87	1.59
128	3.63	2.80	2.35	1.83	1.72
512	3.60	2.83	2.35	2.00	1.76
1024	3.62	2.89	2.69	.....	.....
2048	3.58	2.86	2.33	1.81	1.78
4096	3.46	2.87	2.32	.....	.....

Zinc Nitrate (H. and Hw.).

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 12.5°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
4	80.6	110.8	146.6	171.2	211.18	258.65
8	87.6	121.2	157.2	188.5	238.25	289.67
32	100.0	139.2	182.1	219.0	280.00	343.09
128	110.4	154.1	202.6	243.5	312.91	384.97
512	114.1	164.9	210.1	254.3	336.48	415.20
1024	117.1	165.0	216.6	261.3	347.35	428.50
2048	120.4	169.2	222.4	270.2	352.62	434.82
4096	124.4	175.0	229.1	279.4	359.97	445.53

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 12.5°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
4	64.8	63.3	64.0	61.3	58.7	58.1
8	70.4	69.3	68.6	67.5	66.2	65.0
32	80.4	59.5	79.5	78.4	77.8	77.0
128	88.7	88.1	88.4	87.1	86.9	86.4
512	91.9	94.3	94.7	91.0	93.5	93.2
1024	94.1	94.3	94.5	93.5	96.5	96.2
2048	96.8	96.7	97.1	96.7	98.0	97.6
4096	100.0	100.0	100.0	100.0	100.0	100.0

Temperature Coefficients in Conductivity Units.

v	0–12.5°	12.5–25°	25–35°	35–50°	50–65°
4	2.42	2.86	2.46	.....	3.16
8	2.69	2.88	3.13	.....	3.42
32	3.34	3.43	3.69	.....	4.21
128	3.50	3.88	4.09	.....	4.80
512	4.06	3.62	4.42	.....	5.22
1024	3.83	4.13	4.47	.....	5.41
2048	3.90	4.26	4.78	.....	5.48
4096	4.05	4.33	5.03	.....	5.70

Temperature Coefficients in Per Cent.

v	0–12.5°	12.5–25°	25–35°	35–50°	50–65°
4	3.00	2.58	1.68	.....	1.50
8	3.07	2.38	1.99	.....	1.44
32	3.34	2.46	2.03	.....	1.50
128	3.17	2.52	20.2	.....	1.53
512	3.56	2.20	2.10	.....	1.55
1024	3.27	2.50	2.06	.....	1.56
2048	3.24	1.52	2.15	.....	1.55
4096	3.26	2.47	2.20	.....	1.58

Zinc Sulphate (W.).

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 15°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
2	30.57	45.56	56.62	.....	.....	.....
4	.....	.....	.....	84.78	104.6	122.2
8	43.20	64.74	80.01	95.66	117.8	137.2
16	50.99	75.20	93.6	.....	.....	.....
32	59.37	86.96	108.8	128.8	159.3	186.9
128	76.61	115.8	144.8	174.0	217.9	259.6
512	97.0	147.3	185.1	225.1	286.5	347.3
1024	104.7	156.9	197.8	.....	.....	.....
2048	113.3	170.4	213.0	263.8	338.4	417.3
8192	117.0	176.0	218.0	297.8	385.5	477.4

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 15°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
2	26.1	25.9	25.9	.....	.....	.....
4	.....	.....	.....	28.5	27.1	25.6
8	36.9	36.8	36.7	32.1	30.6	28.7
16	43.6	42.7	42.9	.....	.....	.....
32	50.7	49.4	49.9	43.3	41.3	39.1
128	65.5	65.8	66.4	58.4	56.5	54.4
512	82.9	83.7	84.9	77.4	74.3	72.7
1024	89.5	89.2	90.7	.....	.....	.....
2048	96.8	96.8	97.7	88.6	87.8	87.4
4096	100.0	100.0	100.0	100.0	100.0	100.0

Temperature Coefficients in Conductivity Units.

v	0–15°	15–25°	25–35°	35–50°	50–65°
2	1.00	1.11	.....	.....	.....
4	.....	.....	.....	1.32	1.17
8	1.44	1.53	1.56	1.47	1.29
16	1.61	1.84	.....	.....	.....
32	1.84	2.18	2.00	2.03	1.84
128	2.61	2.90	2.92	2.93	2.78
512	3.36	3.78	4.00	4.09	4.05
1024	3.48	4.09	.....	.....	.....
2048	3.80	4.26	5.08	4.97	5.26
8192	3.93	4.20	.....	5.85	6.13

Temperature Coefficients in Per Cent.

v	0–15°	15–25°	25–35°	35–50°	50–65°
2	3.27	2.44	.....	.....	.....
4	.....	.....	.....	1.56	1.12
8	3.33	2.36	1.95	1.54	1.10
16	3.16	2.45	.....	.....	.....
32	3.10	2.51	1.84	1.58	1.15
128	3.41	2.50	2.02	1.68	1.27
512	3.46	2.57	2.16	1.82	1.41
1024	3.32	2.61	.....	.....	.....
2048	3.35	2.50	2.39	1.88	1.55
8192	3.36	2.39	.....	1.96	1.59

Zinc Acetate (H. and Hw.).

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 12.5°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
4	27.8	38.0	48.0	55.0	.....	.....
8	37.7	52.2	66.6	77.2	90.46	100.61
32	55.5	78.6	103.0	122.4	149.28	172.86
128	70.0	100.7	134.2	162.1	205.63	243.46
512	78.6	113.7	153.2	185.5	242.85	298.49
1024	79.9	116.1	156.7	191.6	246.67	298.74
2048	83.2	120.8	163.2	200.1	257.81	319.47
4096	83.8	121.3	163.4	201.1	259.11	320.44

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 12.5°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
4	33.2	31.3	29.4	37.4	.....	.....
8	45.0	43.0	40.8	38.4	34.9	31.4
32	66.2	64.8	63.0	60.9	57.6	53.9
128	83.6	83.0	82.1	80.6	79.4	76.0
512	93.8	93.7	93.8	92.2	93.7	93.1
1024	95.3	95.7	95.9	95.3	95.2	93.2
2048	99.3	99.6	99.9	99.5	99.5	99.7
4096	100.0	100.0	100.0	100.0	100.0	100.0

Temperature Coefficients in Conductivity Units.

v	0–12.5°	12.5–25°	25–35°	35–50°	50–65°
4	0.81	0.80	0.70	.....	.....
8	1.16	1.15	1.06	.....	0.68
32	1.85	1.95	1.94	.....	1.57
128	2.45	2.68	2.79	.....	2.52
512	2.81	3.16	3.23	.....	3.71
1024	2.90	3.25	3.49	.....	3.47
2048	3.01	3.39	3.69	.....	4.11
4096	3.00	3.37	3.77	.....	4.09

Temperature Coefficients in Per Cent.

v	0–12.5°	12.5–25°	25–35°	35–50°	50–65°
4	2.91	2.11	1.46	.....	.....
8	3.08	2.20	1.59	.....	0.75
32	3.33	2.48	1.88	.....	1.05
128	3.50	2.66	2.08	.....	1.23
512	3.58	2.78	2.11	.....	1.53
1024	3.63	2.79	2.23	.....	1.41
2048	3.61	2.81	2.26	.....	1.59
4096	3.58	2.78	2.31	.....	1.58

Cadmium Chloride (Ws. and W.).

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 12.5°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
4	33.65	46.21	60.15	71.92	89.9	106.5
8	45.32	60.85	79.30	94.59	117.3	139.6
32	65.63	90.33	118.55	142.48	179.9	216.2
128	88.34	122.98	162.32	195.71	247.1	300.0
512	106.14	148.36	197.57	236.99	309.5	378.8
1024	113.78	159.65	212.53	258.73	.....	.....
2048	121.19	166.23	221.36	269.00	355.4	440.5
4096	121.03	172.78	232.06	282.43	.....	.....

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 12.5°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
4	27.8	26.7	25.9	25.5	25.3	24.2
8	37.4	35.2	34.2	33.5	33.0	31.7
32	54.2	52.3	51.1	50.5	50.6	49.1
128	72.9	71.2	69.9	69.3	69.5	68.1
512	87.6	85.9	85.1	83.9	87.1	86.0
1024	93.9	92.4	91.6	91.6	.....	.....
2048	100.0	96.2	95.4	95.3	100.0	100.0
4096	99.9	100.0	100.0	100.0	.....	.....

Temperature Coefficients in Conductivity Units.

v	0–12.5°	12.5–25°	25–35°	35–50°	50–65°
4	1.00	1.12	1.18	1.19	1.12
8	1.24	1.47	1.53	1.51	1.49
32	1.97	2.26	2.39	2.49	2.42
128	2.77	3.15	3.34	3.42	3.52
512	3.38	3.94	3.94	4.83	4.62
1024	3.67	4.23	4.62	.....	.....
2048	3.60	4.41	4.76	5.76	5.67
4096	4.14	4.74	5.04	.....	.....

Temperature Coefficients in Per Cent.

v	0–12.5°	12.5–25°	25–35°	35–50°	50–65°
4	2.97	2.42	1.96	1.65	1.25
8	2.74	2.42	1.93	1.60	1.27
32	3.01	2.50	2.02	1.75	1.34
128	3.14	2.54	2.06	1.75	1.42
512	3.18	2.66	1.99	2.04	1.49
1024	3.23	2.65	2.17	.....	.....
2048	2.97	2.65	2.10	2.14	1.59
4096	3.42	2.62	2.12	.....	.....

Cadmium Bromide (Ws. and W.).

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 12.5°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
4	28.63	40.59	53.40	64.51	80.3	96.4
8	37.80	53.36	70.44	84.81	107.0	128.5
32	57.78	82.06	109.34	132.69	167.6	202.3
128	79.77	113.57	151.23	184.16	234.0	286.4
512	101.37	143.25	190.52	232.83	299.1	369.1
1024	110.69	156.85	208.48	252.81	.....	.....
2048	121.23	170.89	227.41	275.22	350.7	436.0
4096	123.76	174.05	232.20	280.84	.....	.....

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 12.5°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
4	23.1	23.3	23.0	23.0	22.9	22.1
8	30.5	30.6	30.3	30.2	30.5	29.5
32	46.7	47.1	47.1	47.3	47.8	46.4
128	64.4	65.2	65.1	65.6	66.7	65.7
512	81.9	82.3	82.1	82.9	85.3	84.6
1024	89.4	90.1	89.8	90.0	.....	.....
2048	97.9	98.2	97.9	98.0	100.0	100.0
4096	100.0	100.0	100.0	100.0	.....	.....

Temperature Coefficients in Conductivity Units.

v	0–12.5°	12.5–25°	25–35°	35–50°	50–65°
4	0.96	1.02	1.11	.....	1.07
8	1.24	1.37	1.44	.....	1.43
32	1.94	2.18	2.34	.....	2.31
128	2.70	3.01	3.29	.....	3.49
512	3.55	3.78	4.23	.....	4.67
1024	3.69	4.13	4.43	.....	.....
2048	3.97	4.52	4.78	.....	5.69
4096	4.02	4.65	4.86	.....	.....

Temperature Coefficients in Per Cent.

v	0–12.5°	12.5–25°	25–35°	35–50°	50–65°
4	3.35	2.51	2.07	.....	1.33
8	3.28	2.56	2.03	.....	1.34
32	3.35	2.66	2.14	.....	1.38
128	3.38	2.65	2.18	.....	1.49
512	3.30	2.64	2.22	.....	1.56
1024	3.33	2.62	2.12	.....	1.62
2048	3.21	2.64	2.10	.....	.....
4096	3.25	2.67	2.79	.....	.....

Cadmium Iodide (Ws. and W.).

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 12.5°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
4	20.45	29.76	39.84	48.41	61.70	74.96
8	24.31	35.85	48.44	59.43	77.16	94.61
32	39.45	59.23	81.53	101.22	130.4	161.3
128	62.73	93.36	127.36	157.35	204.8	254.8
512	87.06	127.74	172.93	211.90	276.7	345.5
1024	96.31	140.03	188.66	231.10	.....	.....
2048	109.01	157.20	209.73	256.42	333.4	414.5
4096	118.78	170.69	224.93	271.27	.....	.....

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 12.5°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
4	17.2	17.4	17.7	17.8	18.5	18.5
8	20.5	21.0	21.5	21.9	23.1	22.8
32	33.2	34.7	36.3	37.3	39.1	38.9
128	52.8	54.7	56.6	58.0	61.4	61.4
512	73.3	74.8	76.9	78.1	83.0	83.3
1024	81.0	82.6	83.9	85.2	.....	.....
2048	91.7	92.1	93.3	94.5	100.0	100.0
4096	100.0	100.0	100.0	100.0	.....	.....

Temperature Coefficients in Conductivity Units.

v	0–12.5°	12.5–25°	25–35°	35–50°	50–65°
4	0.75	0.81	0.86	0.88	0.88
8	0.92	1.01	1.10	1.18	1.16
32	1.58	1.78	1.97	1.96	2.06
128	2.45	2.72	3.00	3.16	3.33
512	3.25	3.62	3.90	4.32	4.59
1024	3.57	3.82	4.24	.....	.....
2048	3.86	4.20	4.67	5.13	5.41
4096	4.15	4.34	4.63	.....	.....

Temperature Coefficients in Per Cent.

v	0–12.5°	12.5–25°	25–35°	35–50°	50–65°
4	3.67	2.72	2.16	1.82	1.42
8	3.78	2.82	2.27	1.99	1.50
32	4.01	3.01	2.42	1.94	1.58
128	3.90	2.91	2.36	2.01	1.62
512	3.73	2.83	2.26	2.04	1.66
1024	3.71	3.71	2.25	.....	.....
2048	3.54	3.67	2.23	2.00	1.62
4096	3.49	2.54	2.06	.....	.....

Manganous Chloride (W. and Sh.).

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 10.4°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
2	68.14	89.64	121.3	145.0	177.3	210.5
8	84.98	113.5	156.7	188.1	242.2	293.7
16	91.79	121.9	169.0	205.1	266.8	326.6
32	97.4	130.0	181.6	221.2	289.1	357.0
128	107.0	143.8	202.5	246.7	325.0	402.3
512	114.1	154.0	216.6	264.5	356.2	447.4
1024	114.9	154.9	216.8	265.4	366.4	459.2
2048	.....	.....	.....	.....	372.9	468.4

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 10.4°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
2	59.3	57.9	56.0	54.6	47.5	44.9
8	84.0	73.3	72.3	70.9	64.9	62.7
16	79.0	78.7	78.0	77.3	71.5	69.7
32	84.8	83.9	83.8	83.1	77.5	76.2
128	93.1	92.8	93.4	93.0	87.2	85.9
512	99.3	99.4	99.0	99.7	95.5	95.5
1024	100.0	100.0	100.0	100.0	98.3	98.1
2048	.....	.....	.....	.....	100.0	100.0

Temperature Coefficients in Conductivity Units.

v	0–10.4°	10.4–25°	25–35°	35–50°	50–65°
2	2.07	2.17	2.37	.....	2.21
8	2.74	2.96	3.14	.....	3.43
16	2.89	3.23	3.61	.....	3.99
32	3.13	3.53	3.96	.....	4.53
128	3.54	4.02	4.42	.....	5.15
512	3.83	4.28	4.79	.....	6.08
1024	3.85	4.24	4.86	.....	6.19
2048	.....	.....	.....	.....	6.37

Temperature Coefficients in Per Cent.

v	0–10.4°	10.4–25°	25–35°	35–50°	50–65°
2	3.03	2.42	1.95	.....	1.25
8	3.22	2.61	2.00	.....	1.41
16	3.15	2.65	2.14	.....	1.49
32	3.21	2.72	2.13	.....	1.57
128	3.31	2.79	2.18	.....	1.59
512	3.37	2.80	2.22	.....	1.71
1024	3.35	2.74	2.24	.....	1.79
2048	.....	.....	.....	.....	1.71

Manganous Nitrate (Sh.).

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 10.2°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
2	66.1	85.4	116.3	138.7	.....	.....
8	83.1	104.1	144.3	172.5	.....	.....
16	85.5	111.5	154.5	185.1	.....	.....
32	90.5	118.8	165.0	197.9	.....	.....
128	98.3	129.7	182.0	219.8	.....	.....
512	104.8	138.4	194.6	236.2	.....	.....
1024	105.4	139.3	195.8	237.4	.....	.....

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 10.2°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
2	62.7	61.3	59.4	58.4	.....	.....
8	78.8	74.7	73.7	72.7	.....	.....
16	81.1	80.0	78.9	78.0	.....	.....
32	85.9	85.2	84.3	83.4	.....	.....
128	93.3	93.1	93.0	92.6	.....	.....
512	99.4	99.4	99.4	99.5	.....	.....
1024	100.0	100.0	100.0	100.0	.....	.....

Temperature Coefficients in Conductivity Units.

v	0–10.2°	10.2–25°	25–35°	35–50°	50–65°
2	1.89	2.09	2.24	.....	.....
8	2.06	2.72	2.82	.....	.....
16	2.55	2.90	3.06	.....	.....
32	2.77	3.12	3.29	.....	.....
128	3.07	3.53	3.78	.....	.....
512	3.29	3.08	4.16	.....	.....
1024	3.33	3.82	4.16	.....	.....

Temperature Coefficients in Per Cent.

v	0–10.2°	10.2–25°	25–35°	35–50°	50–65°
2	2.86	2.45	1.93	.....	.....
8	2.48	2.61	1.95	.....	.....
16	2.98	2.60	1.98	.....	.....
32	3.06	2.63	1.99	.....	.....
128	3.12	2.72	2.08	.....	.....
512	3.13	2.75	2.14	.....	.....
1024	3.15	2.74	2.13	.....	.....

Manganous Sulphate (Ws. and H.).

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 12.5°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
4	37.25	51.80	67.17	79.11	88.0	108.3
8	44.11	61.37	79.77	94.06	112.8	130.0
32	59.65	83.47	109.27	129.72	156.4	181.8
128	79.46	111.74	147.24	176.10	204.1	241.9
512	97.99	138.76	184.58	222.69	277.5	338.7
1024	107.12	152.31	202.94	245.72	.....	.....
2048	116.15	165.28	221.33	268.33	326.7	404.6
4096	124.47	177.56	238.20	289.39	.....	.....

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 12.5°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
4	29.9	29.2	28.2	27.3	.....	.....
8	35.4	34.6	33.5	32.5	.....	.....
32	47.9	47.0	45.9	44.8	.....	.....
128	63.8	62.9	61.8	60.8	.....	.....
512	78.7	78.1	77.5	76.9	.....	.....
1024	86.1	85.8	85.2	84.9	.....	.....
2048	93.3	93.1	92.9	92.7	.....	.....
4096	100.0	100.0	100.0	100.0	.....	.....

Temperature Coefficients in Conductivity Units.

v	0–12.5°	12.5–25°	25–35°	35–50°	50–65°
4	1.16	1.23	1.19	.....	1.35
8	1.38	1.47	1.43	1.25	1.15
32	1.91	2.06	2.05	1.78	1.69
128	2.58	2.84	2.89	.....	2.52
512	3.26	3.67	3.81	3.65	4.08
1024	3.62	4.05	4.28	.....	.....
2048	3.93	4.48	4.70	3.89	5.19
4096	4.25	4.85	5.12	.....	.....

Temperature Coefficients in Per Cent.

v	0–12.5°	12.5–25°	25–35°	35–50°	50–65°
4	3.11	2.38	1.77	.....	1.53
8	3.13	2.40	1.79	1.33	1.04
32	3.20	2.47	1.88	1.37	1.08
128	3.25	2.54	1.96	.....	1.24
512	3.33	2.64	2.06	1.64	1.47
1024	3.38	2.66	2.11	.....	.....
2048	3.38	2.71	2.12	1.45	1.59
4096	3.42	2.73	2.15	.....	.....

Nickel Chloride (W.).

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 6.3°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
2	73.07	86.49	131.7	158.0	.....	.....
4	.....	.....	.....	.....	218.0	266.0
8	89.51	106.3	164.8	198.9	247.3	301.5
16	95.79	114.4	177.4	215.3	.....	.....
32	102.1	122.0	190.5	231.2	288.1	354.7
128	112.0	134.7	211.6	256.8	321.4	398.4
512	119.0	144.5	227.2	278.6	344.4	426.1
1024	120.7	145.4	229.0	279.4	.....	.....
2048	.....	.....	.....	.....	367.9	455.5

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 6.3°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
2	60.5	59.5	57.5	56.6	.....	.....
4	.....	.....	.....	.....	59.3	58.4
8	74.2	73.1	72.0	71.2	57.2	66.2
16	79.4	78.7	77.5	77.1	.....	.....
32	84.6	83.9	83.1	82.7	78.3	77.9
128	92.8	92.6	92.4	91.9	87.4	87.5
512	99.3	99.4	99.2	99.1	93.6	93.5
1024	100.0	100.0	100.0	100.0	.....	.....
2048	.....	.....	.....	.....	100.0	100.0

Temperature Coefficients in Conductivity Units.

v	0–6.3°	6.3–25°	25–35°	35–50°	50–65°
2	2.13	2.42	2.63	.....	.....
4	.....	.....	.....	.....	3.20
8	2.67	3.13	3.41	.....	3.61
16	2.95	3.37	3.79	.....	.....
32	3.16	3.66	4.07	.....	4.44
128	3.57	4.11	4.52	.....	5.13
512	3.90	4.42	4.96	.....	5.45
1024	3.92	4.47	5.04	.....	.....
2048	.....	.....	.....	.....	5.84

Temperature Coefficients in Per Cent.

v	0–6.3°	6.3–25°	25–35°	35–50°	50–65°
2	2.91	2.80	2.00	.....	.....
4	.....	.....	.....	.....	1.46
8	2.98	2.94	2.07	.....	1.46
16	3.08	2.95	2.14	.....	1.54
32	3.10	3.00	2.14	.....	.....
128	3.19	3.05	2.14	.....	1.59
512	3.25	3.06	2.18	.....	1.58
1024	3.25	3.07	2.20	.....	.....
2048	.....	.....	.....	.....	1.59

Nickel Nitrate (W. and Sh.).

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 6°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
2	71.34	83.06	125.3	150.4	182.7	219.7
8	87.35	102.7	157.9	190.0	237.5	291.9
16	93.67	109.9	169.7	204.8	.....	.....
32	99.15	116.8	180.9	218.6	278.3	342.7
128	108.3	128.7	200.1	242.9	310.6	386.1
512	116.1	137.2	215.4	261.3	336.2	416.0
1024	115.8	137.4	214.3	260.1	344.6	427.3
2048	.....	.....	.....	.....	369.8	453.9
4096	.....	.....	.....	.....	364.1	449.8

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 6°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
2	61.6	60.5	58.5	57.8	49.4	48.4
8	75.4	74.7	73.7	73.0	64.8	64.3
16	80.9	80.0	79.2	78.7	.....	.....
32	85.6	85.0	84.4	84.0	75.3	75.5
128	93.5	93.7	93.4	93.4	84.0	85.0
512	100.0	99.9	100.0	100.0	91.0	91.6
1024	100.0	100.0	100.0	100.0	93.2	94.1
2048	.....	.....	.....	.....	100.0	100.0
4096	.....	.....	.....	.....	.....	.....

Temperature Coefficients in Conductivity Units.

v	0–6°	6–25°	25–35°	35–50°	50–65°
2	1.95	2.22	2.51	.....	2.47
8	2.56	2.91	3.21	.....	3.49
16	2.71	3.15	3.51	.....	.....
32	2.94	3.37	3.77	.....	4.29
128	3.40	3.76	4.28	.....	5.03
512	3.52	4.12	4.59	.....	5.32
1024	3.60	4.05	4.58	.....	5.53
2048	.....	.....	.....	.....	5.61
4096	.....	.....	.....	.....	5.72

Temperature Coefficients in Per Cent.

v	0–6°	6–25°	25–35°	35–50°	50–65°
2	2.73	2.67	2.00	.....	1.35
8	2.93	2.83	2.03	.....	1.42
16	2.89	2.87	2.07	.....	.....
32	2.97	2.89	2.08	.....	1.54
128	3.14	2.92	2.14	.....	1.65
512	3.03	3.00	2.13	.....	1.58
1024	3.11	2.95	2.14	.....	1.60
2048	.....	.....	.....	.....	1.52
4096	.....	.....	.....	.....	1.57

Nickel Sulphate (J. and H.).

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 10°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
2	28.77	38.37	54.58	64.38	.....	.....
4	.....	.....	.....	.....	95.5	111.8
8	40.58	54.42	77.06	90.95	115.5	135.7
16	47.78	64.00	90.44	106.9	.....	.....
32	54.78	73.23	103.5	123.0	158.2	187.8
128	73.95	99.92	140.3	168.4	215.6	259.8
512	93.12	124.7	177.5	213.5	278.9	339.7
1024	100.4	134.8	193.8	234.6	.....	.....
2048	108.3	145.5	208.7	253.9	341.3	425.7

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 10°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
2	26.6	25.8	26.2	.....	.....	.....
4	.....	.....	.....	.....	.....	.....
8	37.5	37.4	36.9	.....	.....	.....
16	44.1	44.0	43.3	.....	.....	.....
32	50.6	50.3	49.6	.....	.....	.....
128	68.3	68.7	67.2	.....	.....	.....
512	86.0	85.7	85.1	.....	.....	.....
1024	92.7	92.6	92.9	.....	.....	.....
2048	100.0	100.0	100.0	.....	.....	.....

Temperature Coefficients in Conductivity Units.

v	0–10°	10–25°	25–35°	35–50°	50–65°
2	0.96	1.08	0.98	.....	.....
4	.....	.....	.....	.....	1.09
8	1.38	1.50	1.39	1.64	1.35
16	1.62	1.76	1.64	.....	.....
32	1.84	2.01	1.95	2.35	1.97
128	2.59	2.69	2.81	3.15	2.95
512	3.16	3.52	3.60	4.36	4.05
1024	3.44	3.93	4.08	.....	.....
2048	3.72	4.21	4.52	.....	5.63

Temperature Coefficients in Per Cent.

v	0–10°	10–25°	25–35°	35–50°	50–65°
2	3.34	2.81	1.80	.....	.....
4	.....	.....	.....	.....	1.14
8	3.40	2.75	1.80	1.80	1.17
16	3.39	2.75	1.81	.....	.....
32	3.36	2.74	1.88	1.91	1.25
128	3.50	2.69	2.00	1.87	1.37
512	3.39	2.82	2.03	2.04	1.45
1024	3.43	2.91	2.11	.....	.....
2048	3.43	2.89	2.17	.....	1.65

Nickel Acetate (J. and Hw.).

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 10°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
2	20.11	27.24	39.22	47.46	60.45	72.22
8	38.95	52.07	74.10	89.29	115.65	138.32
16	47.81	64.03	91.60	110.2	144.47	171.27
32	54.11	73.82	105.8	128.1	171.78	206.39
128	69.22	92.82	134.6	164.0	223.26	272.67
512	76.66	103.5	150.7	184.7	256.95	316.98
1024	78.65	105.9	153.9	189.1	270.18	336.46
2048	82.24	110.9	160.6	196.6	276.44	347.66

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 10°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
2	24.5	24.6	24.4	24.1	21.9	20.8
8	47.4	47.0	45.1	45.4	41.8	39.8
16	56.8	57.7	57.0	56.1	52.3	49.3
32	65.8	66.6	65.9	65.2	62.1	59.4
128	84.2	83.7	83.8	83.4	80.8	78.4
512	93.2	93.3	93.8	93.9	92.9	91.2
1024	95.6	95.5	95.8	96.2	97.7	96.8
2048	100.0	100.0	100.0	100.0	100.0	100.0

Temperature Coefficients in Conductivity Units.

v	0–10°	10–25°	25–35°	35–50°	50–65°
2	0.71	0.79	0.82	.....	0.78
8	1.31	1.47	1.51	.....	1.49
16	1.62	1.84	1.86	.....	1.79
32	1.97	2.13	2.23	.....	2.31
128	2.36	2.78	2.94	.....	3.29
512	2.68	3.14	3.40	.....	4.00
1024	2.72	3.20	3.52	.....	4.42
2048	2.86	3.31	3.60	.....	4.73

Temperature Coefficients in Per Cent.

v	0–10°	10–25°	25–35°	35–50°	50–65°
2	3.53	2.90	2.09	.....	1.29
8	3.39	2.82	2.04	.....	1.29
16	3.39	2.87	2.03	.....	1.24
32	3.64	2.89	2.11	.....	1.34
128	3.41	3.00	2.18	.....	1.47
512	3.50	3.03	2.26	.....	1.56
1024	3.46	3.02	2.29	.....	1.64
2048	3.48	2.98	2.24	.....	1.71

Cobalt Chloride (W.).

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 7.2°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
2	71.77	87.16	129.5	154.9	.....	.....
4	.....	.....	.....	.....	226.4	274.3
8	87.75	107.4	161.5	195.4	249.4	302.5
16	94.08	115.3	174.2	211.3	.....	.....
32	100.2	122.8	186.7	226.6	288.7	355.6
128	109.6	135.1	207.1	252.1	326.7	404.2
512	116.5	143.7	221.2	270.5	352.2	442.8
1024	116.8	144.0	221.1	270.6	.....	.....
2048	.....	.....	.....	.....	368.7	463.2

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 7.2°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
2	61.4	60.5	58.6	57.2	.....	.....
4	.....	.....	.....	.....	61.4	59.2
8	75.1	74.6	73.0	72.2	67.6	65.3
16	80.5	80.1	78.8	78.1	.....	.....
32	85.8	85.3	84.4	83.7	78.3	76.8
128	93.8	93.8	93.7	93.2	88.6	87.3
512	99.7	99.8	100.0	100.0	95.5	95.6
1024	100.0	100.0	100.0	100.0	.....	.....
2048	.....	.....	.....	.....	100.0	100.0

Temperature Coefficients in Conductivity Units.

v	0–7.2°	7.2–25°	25–35°	35–50°	50–65°
2	2.14	2.38	2.54	.....	.....
4	.....	.....	.....	.....	3.19
8	2.73	3.04	3.39	3.60	3.54
16	2.95	3.31	3.71	.....	.....
32	3.14	3.59	3.99	4.14	4.46
128	3.54	4.04	4.50	4.99	5.17
512	3.77	4.35	4.93	5.45	6.04
1024	3.78	4.33	4.95	.....	.....
2048	.....	.....	.....	.....	6.30

Temperature Coefficients in Per Cent.

v	0–7.2°	7.2–25°	25–35°	35–50°	50–65°
2	2.98	2.73	1.96	.....	.....
4	.....	.....	.....	.....	1.41
8	3.11	2.83	2.10	1.84	1.42
16	3.14	2.87	2.13	.....	.....
32	3.13	2.92	2.14	1.83	1.54
128	3.23	2.99	2.17	1.98	1.58
512	3.23	3.03	2.22	2.02	1.71
1024	3.24	3.01	2.24	.....	.....
2048	.....	.....	.....	.....	1.71

Cobalt Bromide (Ws. and W.).

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 12.5°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
4	87.82	120.24	155.60	196.30	239.0	289.6
8	95.04	131.29	171.30	204.48	259.4	315.7
32	105.56	147.10	193.09	233.04	299.5	367.3
128	115.88	162.19	214.02	259.91	329.5	406.7
512	119.47	169.42	224.49	273.44	353.1	436.6
1024	120.80	173.38	231.56	281.16	.....	.....
2048	124.00	174.68	234.28	282.65	370.6	464.3
4096	125.45	177.93	236.78	289.34	.....	.....

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 12.5°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
4	70.0	67.6	65.7	67.8	64.5	62.4
8	75.7	73.8	72.3	70.7	70.0	68.0
32	84.1	82.7	81.5	80.5	80.8	79.1
128	92.3	92.0	90.4	89.8	88.9	87.6
512	95.2	95.2	94.8	94.5	95.3	94.0
1024	96.3	97.5	97.8	97.2	.....	.....
2048	98.8	98.2	98.9	97.7	100.0	100.0
4096	100.0	100.0	100.0	100.0	.....	.....

Temperature Coefficients in Conductivity Units.

v	0–12.5°	12.5–25°	25–35°	35–50°	50–65°
4	2.59	2.83	.....	2.85	3.37
8	2.90	3.20	3.32	3.66	3.75
32	3.32	3.68	4.00	4.43	4.52
128	3.71	4.15	4.59	4.64	5.15
512	4.00	4.41	4.90	5.31	5.57
1024	4.21	4.65	4.96	.....	.....
2048	4.05	4.77	4.84	5.86	6.25
4096	4.20	4.71	5.26	.....	.....

Temperature Coefficients in Per Cent.

v	0–12.5°	12.5–25°	25–35°	35–50°	50–65°
4	2.95	2.33	2.62	1.45	1.41
8	3.05	2.44	1.94	1.79	1.44
32	3.15	2.50	2.07	1.90	1.51
128	3.20	2.56	2.15	1.80	1.56
512	3.35	2.60	2.18	1.94	1.58
1024	3.49	2.68	2.14	.....	.....
2048	3.27	2.73	2.07	2.01	1.68
4096	3.35	2.65	2.22	.....	.....

Cobalt Nitrate (W.).

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 5.4°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
2	71.65	82.27	125.9	150.7	.....	.....
4	.....	.....	.....	.....	216.8	263.5
8	87.07	101.0	157.9	189.9	239.7	291.4
16	93.16	108.2	169.2	204.7	.....	.....
32	98.9	114.7	180 8	218.6	276.9	340.2
128	108.0	125.8	200.4	242.2	310.1	384.0
512	115.9	135.5	215.5	262.1	334.7	414.6
1024	116.1	135.4	215.3	262.0	.....	.....
2048	.....	.....	.....	.....	355.3	439.0

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 5.4°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
2	61.7	60.8	58.5	57.5	.....	.....
4	.....	.....	.....	.....	61.0	60.0
8	75.0	74.6	73.3	72.5	67.5	66.4
16	80.2	79.9	78.6	78.1	.....	.....
32	85.2	84.7	84.0	83.4	77.9	77.5
128	93.0	92.9	93.1	92.4	87.3	87.5
512	99.8	100.0	100.0	100.0	94.2	94.4
1024	100.0	100.0	100.0	100.0	.....	.....
2048	.....	.....	.....	.....	100.0	100.0

Temperature Coefficients in Conductivity Units.

v	0–5.4°	5.4–25°	25–35°	35–50°	50–65°
2	1.97	2.23	2.48	.....	.....
4	.....	.....	.....	.....	3.11
8	2.39	2.90	3.20	3.32	3.45
16	2.79	3.11	3.55	.....	.....
32	2.92	3.37	3.78	3.89	4.22
128	3.30	3.81	4.18	4.53	4.93
512	3.63	4.08	4.66	4.84	5.33
1024	3.57	4.08	4.67	.....	.....
2048	.....	.....	.....	.....	5.58

Temperature Coefficients in Per Cent.

v	0–5.4°	5.4–25°	25–35°	35–50°	50–65°
2	2.75	2.71	1.97	.....	.....
4	.....	.....	.....	.....	1.43
8	2.74	2.87	2.03	1.75	1.44
16	2.99	2.87	2.09	.....	.....
32	2.95	2.94	2.09	1.78	1.52
128	3.06	3.03	2.09	1.87	1.59
512	3.13	3.01	2.16	1.85	1.59
1024	3.08	3.01	2.17	.....	.....
2048	.....	.....	.....	.....	1.57

Cobalt Sulphate (J. and H.).

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 10°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
2	29.47	39.22	55.10	65.57	.....	.....
4	.....	.....	.....	.....	95.6	112.7
8	42.06	56.00	78.37	93.14	117.2	137.5
16	49.26	65.61	91.97	109.4	.....	.....
32	56.26	75.04	105.4	125.8	160.0	189.6
128	75.89	101.5	143.4	172.1	203.4	256.6
512	94.88	126.9	180.2	218.1	290.7	346.0
1024	101.9	137.6	196.9	239.2	.....	.....
2048	110.9	148.4	214.1	259.2	340.3	421.6

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 10°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
2	26.6	26.4	25.7	25.3	.....	.....
4	.....	.....	.....	.....	.....	.....
8	37.9	37.7	36.6	35.9	.....	.....
16	44.4	44.2	43.0	42.2	.....	.....
32	50.7	50.6	49.2	48.5	.....	.....
128	68.4	68.4	67.0	66.4	.....	.....
512	85.6	85.5	84.2	84.2	.....	.....
1024	91.9	92.7	92.0	92.3	.....	.....
2048	100.0	100.0	100.0	100.0	.....	.....

Temperature Coefficients in Conductivity Units.

v	0–10°	10–25°	25–35°	35–50°	50–65°
2	0.97	1.06	1.04	.....	.....
4	.....	.....	.....	.....	1.14
8	1.39	1.49	1.47	.....	1.35
16	1.63	1.76	1.74	.....	....
32	1.88	2.02	2.04	.....	1.97
128	2.56	2.79	2.87	.....	3.55
512	3.21	3.55	3.79	.....	3.49
1024	3.57	3.95	4.23	.....	.....
2048	3.75	4.38	4.51	.....	5.42

Temperature Coefficients in Per Cent.

v	0–10°	10–25°	25–35°	35–50°	50–65°
2	3.29	2.70	1.89	.....	.....
4	.....	.....	.....	.....	1.19
8	3.30	2.66	1.88	.....	1.15
16	3.31	2.68	1.89	.....	.....
32	3.34	2.69	1.94	.....	1.23
128	3.37	2.75	2.00	.....	1.74
512	3.38	2.79	2.10	.....	1.20
1024	3.50	2.87	2.15	.....	.....
2048	3.38	2.95	2.11	.....	1.59

Cobalt Acetate (J. and W.).

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 10°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
2	22.20	29.79	42.55	51.02	.....	.....
4	.....	.....	.....	.....	91.4	110.9
8	41.31	55.27	78.37	94.00	106.8	131.2
16	50.07	67.20	95.68	114.9	.....	.....
32	56.92	76.66	109.8	132.1	175.8	217.1
128	71.25	95.67	136.8	166.3	206.9	256.4
512	78.29	106.0	153.6	188.1	241.9	300.7
1024	78.88	107.1	155.3	189.8	.....	.....
2048	82.71	113.2	163.7	199.3	260.4	326.0

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 10°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
2	26.8	26.3	26.0	25.6	.....	.....
8	50.0	48.8	47.9	46.1	.....	.....
16	60.5	59.4	58.5	57.7	.....	.....
32	68.8	67.7	67.1	66.3	.....	.....
128	86.1	84.5	83.6	83.4	.....	.....
512	94.7	93.6	93.8	94.4	.....	.....
1024	95.4	94.6	94.9	95.2	.....	.....
2048	100.0	100.0	100.0	100.0	.....	.....

Temperature Coefficients in Conductivity Units.

v	0–10°	10–25°	25–35°	35–50°	50–65°
2	0.75	0.85	0.87	.....	.....
4	.....	.....	.....	.....	1.30
8	1.39	1.54	1.56	.....	1.63
16	1.71	1.90	1.92	.....	.....
32	1.97	2.21	2.23	.....	2.75
128	2.44	2.74	2.95	.....	3.30
512	2.77	3.15	3.45	.....	3.92
1024	2.82	3.21	3.45	.....	.....
2048	3.05	3.37	3.56	.....	4.37

Temperature Coefficients in Per Cent.

v	0–10°	10–25°	25–35°	35–50°	50–65°
2	3.37	2.85	2.04	.....	.....
4	.....	.....	.....	.....	1.42
8	3.36	2.79	1.99	.....	1.52
16	3.42	2.83	2.01	.....	.....
32	3.46	2.88	2.03	.....	1.56
128	3.42	2.86	2.16	.....	1.59
512	3.54	2.97	2.25	.....	1.62
1024	3.58	2.99	2.22	.....	.....
2048	3.69	2.98	2.17	.....	1.68

Silver Nitrate (Ws. and C.).

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 12.5°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
2	.....	.....	.....	.....	124.9	152.2
4	51.43	70.55	91.63	109.95	.....	.....
8	56.01	76.68	99.80	120.37	150.7	184.8
32	61.80	85.30	111.20	133.14	168.6	207.7
128	65.79	91.06	119.14	142.67	180.4	221.4
512	69.24	94.99	125.23	148.77	187.7	229.0
1024	.....	.....	.....	.....	190.1	230.7
2048	69.83	96.67	126.81	151.24	191.5	232.4
4096	71.03	99.03	129.68	153.32	.....	.....

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 12.5°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
2	.....	.....	.....	.....	65.2	65.5
4	72.4	71.3	70.6	71.7	.....	.....
8	78.8	77.4	76.9	78.5	78.7	79.5
32	87.0	86.2	85.7	86.8	88.0	89.4
128	92.6	92.0	91.8	93.1	94.2	95.3
512	97.4	95.9	96.5	97.0	98.0	98.5
1024	.....	.....	.....	.....	99.3	99.3
2048	98.3	97.6	97.7	98.7	100.0	100.0
4096	100.0	100.0	100.0	100.9	.....	.....

Temperature Coefficients in Conductivity Units.

v	0–12.5°	12.5–25°	25–35°	35–50°	50–65°
2	1.53	1.69	1.83	.....	1.82
4	.....	.....	.....	.....	.....
8	1.65	1.65	2.06	2.02	2.27
32	1.88	2.07	2.19	2.36	2.61
128	2.02	2.25	2.35	2.52	2.73
512	2.06	2.42	2.35	2.60	2.75
1024	.....	.....	.....	.....	2.71
2048	2.15	2.41	2.44	2.68	2.73
4096	2.24	2.45	2.36	.....	.....

Temperature Coefficients in Per Cent.

v	0–12.5°	12.5–25°	25–35°	35–50°	50–65°
2	2.98	2.40	2.00	.....	1.46
4	.....	.....	.....	.....	.....
8	2.95	2.15	2.06	1.68	1.51
32	2.94	2.43	1.97	1.78	1.55
128	2.94	2.47	1.97	1.77	1.51
512	2.98	2.55	1.87	1.75	1.46
1024	.....	.....	.....	.....	1.43
2048	3.01	2.49	1.92	1.79	1.43
4096	3.15	2.47	1.82	.....	.....

Cupric Chloride (W.).

*Molecular Conductivity.**

v	$\mu_v 0°$	$\mu_v 13.8°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
2	68.95	96.36	119.8	141.3	.....	.....
8	87.57	127.0	158.3	189.9	.....	.....
16	94.82	137.0	173.5	208.6	.....	.....
32	101.3	147.1	187.5	226.2	.....	.....
128	111.5	164.5	210.1	255.6	.....	.....
512	118.4	175.3	224.0	273.4	.....	.....
1024	123.0	181.7	232.2	282.6	.....	.....

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 13.8°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
2	56.1	53.0	51.6	50.0	.....	.....
8	71.2	69.9	68.2	67.2	.....	.....
16	77.1	75.4	74.7	73.8	.....	.....
32	82.4	81.0	80.7	80.0	.....	.....
128	90.7	90.5	90.5	90.4	.....	.....
512	96.3	96.5	96.5	96.7	.....	.....
1024	100.0	100.0	100.0	100.0	.....	.....

Temperature Coefficients in Conductivity Units.

v	0–13.8°	13.8–25°	25–35°	35–50°	50–65°
2	1.99	2.09	2.15	.....	.....
8	2.86	2.79	3.16	.....	.....
16	3.06	3.26	3.51	.....	.....
32	3.32	3.61	3.87	.....	.....
128	3.84	4.07	4.55	.....	.....
512	4.12	4.35	4.94	.....	.....
1024	4.25	4.51	5.04	.....	.....

Temperature Coefficients in Per Cent.

v	0–13.8°	13.8–25°	25–35°	35–50°	50–65°
2	2.89	2.17	1.79	.....	.....
8	3.26	2.20	2.00	.....	.....
16	3.23	2.37	2.02	.....	.....
32	3.28	2.45	2.06	.....	.....
128	3.44	2.47	2.17	.....	.....
512	3.48	2.48	2.20	.....	.....
1024	3.46	2.48	2.17	.....	.....

Cupric Bromide (J.).

*Molecular Conductivity.**

v	$\mu_v 0°$	$\mu_v 13.3°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
2	75.27	103.9	135.3	156.1	.....	.....
8	91.31	131.0	169.6	203.8	.....	.....
16	99.30	141.4	183.0	220.3	.....	.....
32	105.0	149.8	194.3	234.1	.....	.....
128	118.2	169.0	220.0	266.0	.....	.....
512	122.2	177.3	230.8	278.4	.....	.....
1024	125.4	181.2	236.6	285.9	.....	.....
2048	131.4	187.5	242.7	295.0	.....	.....
4096	.....	.....	248.8	300.2	.....	.....
8192	.....	.....	274.8	325.1	.....	.....

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 13.3°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
2	57.3	55.4	55.7	52.9	.....	.....
8	69.5	69.9	69.9	69.1	.....	.....
16	75.6	75.4	75.4	74.7	.....	.....
32	79.9	79.9	80.1	79.3	.....	.....
128	90.0	90.1	90.6	90.2	.....	.....
512	93.0	94.6	95.1	94.4	.....	.....
1024	95.4	96.6	97.5	96.9	.....	.....
2048	100.0	100.0	100.0	100.0	.....	.....

Temperature Coefficients in Conductivity Units.

v	0–13.3°	13.3–25°	25–35°	35–50°	50–65°
2	2.16	2.68	2.08	.....	.....
8	2.99	3.30	3.42	.....	.....
16	3.17	3.50	3.73	.....	.....
32	3.37	3.75	3.98	.....	.....
128	3.82	4.35	4.60	.....	.....
512	4.14	4.57	4.76	.....	.....
1024	4.19	4.73	4.93	.....	.....
2048	4.22	4.72	5.23	.....	.....
4096	.....	.....	5.14	.....	.....
8192	.....	.....	5.03	.....	.....

Temperature Coefficients in Per Cent.

v	0–13.3°	13.3–25°	25–35°	35–50°	50–65°
2	2.87	2.58	1.54	.....	.....
8	3.27	2.51	2.02	.....	.....
16	3.19	2.48	2.04	.....	.....
32	3.21	2.50	2.04	.....	.....
128	3.23	2.57	2.09	.....	.....
512	3.38	2.57	2.06	.....	.....
1024	3.34	2.61	2.08	.....	.....
2048	3.21	2.52	2.15	.....	.....

*Decomposed at higher temperatures.

Copper Nitrate (W. and Hw.).

*Molecular Conductivity.**

v	$\mu_v 0°$	$\mu_v 5°$	$\mu_v 15.8°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$
2	69.38	79.17	102.5	123.3	147.1	.....
8	86.48	99.21	130.0	156.7	188.5	.....
16	93.0	106.7	140.2	169.4	204.0	.....
32	99.15	113.8	150.0	181.8	219.9	.....
128	109.0	125.5	166.5	201.9	245.0	.....
512	117.7	136.1	180.2	218.4	266.6	.....
1024	119.8	138.6	183.3	222.9	271.7	.....

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 5°$	$\alpha 15.8°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$
2	57.9	57.1	55.9	55.3	54.1	.....
8	72.2	71.6	70.9	70.3	69.4	.....
16	77.6	77.0	76.5	76.0	75.1	.....
32	82.8	82.1	81.9	81.6	80.9	.....
128	91.0	90.5	90.8	90.6	90.2	.....
512	98.2	98.2	98.3	98.0	98.0	.....
1024	100.0	100.0	100.0	100.0	100.0	.....

Temperature Coefficients in Conductivity Units.

v	0–5°	5–15.8°	15.8–25°	25–35°	35–50°
2	1.96	2.16	2.26	2.38	.....
8	2.55	2.85	2.90	3.18	.....
16	2.74	3.10	3.17	3.46	.....
32	2.93	3.35	3.46	3.81	.....
128	3.30	3.80	3.85	4.31	.....
512	3.68	4.08	4.15	4.82	.....
1024	3.76	4.30	4.30	4.88	.....

Temperature Coefficients in Per Cent.

v	0–5°	5–15.8°	15.8–25°	25–35°	35–50°
2	2.83	2.73	2.20	1.93	.....
8	2.95	2.87	2.23	2.03	.....
16	2.95	2.91	2.26	2.04	.....
32	2.95	2.94	2.31	2.10	.....
128	3.03	3.03	2.33	2.14	.....
512	3.13	3.00	2.30	2.21	.....
1024	3.14	2.99	2.35	2.19	.....

Copper Sulphate (Ws. and H.).

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 12.5°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
2	30.06	42.12	55.11	65.15	.....	.....
4	.....	.....	.....	.....	93.8	107.4
8	42.30	59.35	77.33	91.16	109.1	124.5
32	57.24	80.53	105.64	124.94	152.7	173.8
128	76.91	108.74	143.21	170.60	210.3	247.3
512	97.88	138.92	184.97	221.08	279.1	237.7
1024	105.85	150.86	202.57	245.05	.....	.....
2048	113.36	161.78	217.71	264.44	343.3	422.7
4096	119.18	171.07	231.27	281.42	.....	.....

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 12.5°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
2	25.2	24.6	23.8	23.2	.....	.....
8	35.5	34.7	33.4	32.4	.....	.....
32	48.0	47.1	45.7	44.4	.....	.....
128	64.5	63.6	61.9	60.6	.....	.....
512	82.1	81.2	80.0	78.6	.....	.....
1024	88.8	88.2	87.6	87.1	.....	.....
2048	95.1	94.6	94.1	94.0	.....	.....
4096	100.0	100.0	100.0	100.0	.....	.....

Temperature Coefficients in Conductivity Units.

v	0–12.5°	12.5–25°	25–35°	35–50°	50–65°
2	0.96	1.04	1.00	.....	.....
4	.....	.....	.....	.....	0.91
8	1.36	1.44	1.38	1.26	1.02
32	1.86	2.01	1.93	1.85	1.41
128	2.54	2.76	2.74	2.65	2.45
512	3.28	3.68	3.61	3.87	3.91
1024	3.60	4.14	4.25	.....	.....
2048	3.87	4.47	4.67	5.26	5.29
4096	4.15	4.82	5.02	.....	.....

Temperature Coefficients in Per Cent.

v	0–12.5°	12.5–25°	25–35°	35–50°	50–65°
2	3.19	2.47	1.82	.....	.....
4	.....	.....	.....	.....	0.97
8	3.22	2.43	1.79	1.38	0.93
32	3.25	2.50	1.83	1.48	0.92
128	3.30	2.54	1.91	1.55	1.16
512	3.35	2.65	1.95	1.75	1.40
1024	3.40	2.74	2.10	.....	.....
2048	3.41	2.76	2.15	1.99	1.54
4096	3.48	2.82	2.17	.....	.....

*Decomposed at higher temperatures.

Lead Chloride (Ws. and H.).

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 12.5°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
64	104.41	144.76	188.71	224.76	277.13	331.22
128	116.27	161.56	211.43	252.17	314.89	379.39
512	133.10	186.16	246.31	293.05	370.26	452.75
1024	136.89	191.98	253.96	306.43	387.25	476.90
2048	138.88	195.16	258.49	312.13	412.06	502.84
4096	144.70	204.36	270.26	327.80	416.97	515.18

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 12.5°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
64	72.2	70.8	69.8	68.6	66.5	64.3
128	80.4	79.0	78.2	76.9	75.5	73.6
512	92.0	91.1	91.1	89.4	88.8	87.9
1024	94.6	93.9	94.0	93.5	92.9	92.6
2048	96.0	95.5	95.6	95.2	98.8	97.6
4096	100.0	100.0	100.0	100.0	100.0	100.0

Temperature Coefficients in Conductivity Units.

v	0–12.5°	12.5–25°	25–35°	35–50°	50–65°
64	3.23	3.52	3.61	.....	3.61
128	3.63	3.99	4.07	.....	4.30
512	4.25	4.81	4.67	.....	5.50
1024	4.41	4.96	5.25	.....	5.98
2048	4.70	5.07	5.36	.....	6.05
4096	4.77	5.27	5.75	.....	6.57

Temperature Coefficients in Per Cent.

v	0–12.5°	12.5–25°	25–35°	35–50°	50–65°
64	3.09	2.43	1.91	.....	1.30
128	3.12	2.47	1.93	.....	1.37
512	3.19	2.58	1.90	.....	1.49
1024	3.22	2.58	2.07	.....	1.54
2048	3.24	2.60	2.07	.....	1.47
4096	3.30	2.58	2.13	.....	1.58

Lead Nitrate (J. and Sh.).

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 10°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
2	46.30	63.55	92.68	113.0	143.0	175.9
8	71.12	97.32	139.8	169.5	218.4	267.8
16	84.43	113.3	161.5	195.6	251.7	309.4
32	93.85	128.3	181.5	118.8	281.6	347.8
128	115.1	153.1	214.0	256.7	333.3	410.2
512	129.1	171.9	238.3	287.1	369.6	455.0
1024	133.6	178.1	247.4	297.5	385.1	477.7
2048	135.1	178.7	247.2	299.0	397.9	491.8

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 10°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
2	34.3	35.6	37.5	37.8	35.9	35.8
8	52.6	54.5	55.3	56.7	54.8	54.4
16	62.5	63.4	65.3	65.4	63.2	62.9
32	69.5	71.8	73.4	73.2	70.8	70.7
128	85.2	85.7	86.6	85.9	83.8	83.4
512	95.6	96.2	96.4	96.0	92.9	92.5
1024	98.9	99.7	100.0	99.5	96.8	97.2
2048	100.0	100.0	100.0	100.0	100.0	100.0

Temperature Coefficients in Conductivity Units.

v	0–10°	10–25°	25–35°	35–50°	50–65°
2	1.72	1.94	2.03	.....	2.19
8	2.62	2.83	2.97	.....	3.29
16	2.88	3.21	3.41	.....	3.85
32	3.44	3.55	3.73	.....	4.41
128	3.80	4.06	4.27	.....	5.13
512	4.28	4.43	4.88	.....	5.69
1024	4.45	4.62	5.01	.....	6.17
2048	4.36	4.57	5.18	.....	6.36

Temperature Coefficients in Per Cent.

v	0–10°	10–25°	25–35°	35–50°	50–65°
2	3.71	3.05	2.19	.....	1.53
8	3.68	2.91	2.12	.....	1.51
16	3.41	2.83	2.11	.....	1.53
32	3.67	2.77	2.05	.....	1.53
128	3.30	2.65	2.00	.....	1.53
512	3.32	2.58	2.05	.....	1.54
1024	3.33	2.59	2.03	.....	1.60
2048	3.23	2.55	2.10	.....	1.64

Lead Acetate (H. and Hw.).

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 12.5°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
4	11.2	16.4	22.1	27.0	34.57	41.42
8	16.0	23.3	31.2	37.8	48.18	58.12
32	28.8	41.4	54.9	66.2	89.36	102.61
128	46.4	66.3	87.1	104.2	132.56	158.54
512	65.3	92.7	123.1	146.2	191.61	228.18
1024	74.5	108.2	139.1	167.2	214.38	255.53
2048	84.3	119.4	156.8	189.1	242.06	289.42
4096	87.8	124.6	165.5	198.7	260.97	315.50

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 12.5°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
4	12.8	13.2	13.3	13.6	13.2	13.1
8	18.2	18.7	18.8	19.0	18.5	18.4
32	32.8	33.2	33.2	33.3	32.3	32.5
128	52.8	53.2	52.6	52.4	50.8	50.2
512	74.4	74.4	74.4	73.6	73.4	72.3
1024	84.9	86.8	84.0	84.2	82.1	81.0
2048	96.0	95.8	94.7	95.2	92.7	91.7
4096	100.0	100.0	100.0	100.0	100.0	100.0

Temperature Coefficients in Conductivity Units.

v	0–12.5°	12.5–25°	25–35°	35–50°	50–65°
4	0.41	0.46	0.49	.....	0.46
8	0.58	0.63	0.66	.....	0.66
32	1.01	1.08	1.13	.....	1.22
128	1.59	1.66	1.71	.....	1.73
512	2.19	2.43	2.31	.....	2.44
1024	2.70	2.47	2.81	.....	2.74
2048	2.81	2.99	3.23	.....	3.16
4096	2.94	3.27	3.32	.....	3.64

Temperature Coefficients in Per Cent.

v	0–12.5°	12.5–25°	25–35°	35–50°	50–65°
4	3.66	2.81	2.22	.....	1.33
8	3.63	2.70	2.12	.....	1.37
32	3.50	2.61	2.06	.....	1.45
128	3.42	2.50	1.96	.....	1.31
512	3.35	2.62	1.88	.....	1.27
1024	3.62	2.28	2.02	.....	1.28
2048	3.34	2.50	2.06	.....	1.36
4096	3.35	2.62	2.15	.....	1.39

Aluminium Chloride (Ws. and Sh.)

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 12.5°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
4	105.90	147.40	193.51	232.54	296.9	361.4
8	120.22	168.23	220.86	266.58	341.6	419.1
16	.....	.....	.....	.....	381.1	470.9
32	142.21	200.06	265.12	322.18	.....	.....
64	.....	.....	.....	.....	455.5	567.3
128	162.66	231.08	308.80	377.28	.....	.....
512	176.77	252.75	341.24	421.06	567.5	730.0
1024	184.58	266.73	360.56	446.95	609.3	796.7
2048	193.37	279.49	381.44	472.46	647.5	868.5
4096	199.03	290.06	398.79	499.92	703.2	953.2

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 12.5°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
4	53.2	50.8	48.5	46.5	42.2	37.9
8	60.4	58.0	55.4	53.3	48.6	44.0
16	.....	.....	.....	.....	54.2	49.4
32	71.5	69.0	66.5	64.4	.....	.....
64	.....	.....	.....	.....	64.8	59.5
128	81.7	79.7	77.4	75.5	.....	.....
512	88.8	87.1	85.5	84.2	80.7	76.6
1024	92.8	91.9	90.4	89.4	86.6	83.6
2048	97.2	96.3	95.6	94.5	92.1	91.1
4096	100.0	100.0	100.0	100.0	100.0	100.0

Temperature Coefficients in Conductivity Units.

v	0–12.5°	12.5–25°	25–35°	35–50°	50–65°
4	3.32	3.69	3.90	.....	4.30
8	3.84	4.21	4.57	.....	5.16
16	.....	.....	.....	.....	5.99
32	4.63	5.21	5.71	.....	.....
64	.....	.....	.....	.....	7.45
128	5.47	6.22	6.85	.....	.....
512	6.08	7.08	7.98	.....	10.83
1024	6.57	7.51	8.64	.....	12.49
2048	6.89	8.16	9.10	.....	14.73
4096	7.28	8.70	10.11	.....	16.66

Temperature Coefficients in Per Cent.

v	0–12.5°	12.5–25°	25–35°	35–50°	50–65°
4	3.14	2.50	2.02	.....	1.45
8	3.19	2.50	2.07	.....	1.51
16	.....	.....	.....	.....	1.58
32	3.26	2.60	2.15	.....	.....
64	.....	.....	.....	.....	1.62
128	3.36	2.69	2.22	.....	.....
512	3.07	2.80	2.34	.....	1.91
1024	3.55	2.82	2.40	.....	2.05
2048	3.56	2.92	2.39	.....	2.27
4096	3.66	3.00	2.54	.....	2.37

Aluminium Nitrate (Ws. and Sh.).

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 12.5°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
4	102.82	139.22	180.52	216.54	276.0	338.6
8	115.67	158.84	206.89	248.82	320.8	393.6
32	136.32	188.54	247.70	299.96	394.3	487.3
128	156.18	217.14	287.05	349.49	464.4	583.9
512	166.97	234.81	313.05	384.43	535.8	685.9
1024	173.45	247.08	332.20	410.18	575.8	750.5
2048	179.32	255.68	345.82	428.32	613.3	820.9
4096	187.89	272.12	372.07	462.84	656.6	908.2

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 12.5°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
4	54.7	51.2	48.5	46.8	42.0	37.3
8	61.6	58.4	55.6	53.8	48.8	43.4
32	72.5	69.3	66.6	64.9	60.0	53.6
128	83.1	79.8	77.1	75.6	70.7	64.3
512	88.9	86.3	84.1	83.1	82.0	75.5
1024	92.3	90.8	89.3	88.7	87.7	82.6
2048	95.4	94.0	92.9	92.6	93.4	90.4
4096	100.0	100.0	100.0	100.0	100.0	100.0

Temperature Coefficients in Conductivity Units.

v	0–12.5°	12.5–25°	25–35°	35–50°	50–65°
4	2.91	3.30	3.60	3.96	4.17
8	3.45	3.84	4.19	4.79	4.87
32	4.18	4.75	5.23	6.29	6.20
128	4.88	5.60	6.25	7.66	7.97
512	5.45	6.28	7.17	10.09	10.07
1024	5.93	6.86	7.86	11.04	11.65
2048	6.19	7.31	8.37	12.33	13.84
4096	6.90	8.19	9.32	12.92	16.77

Temperature Coefficients in Per Cent.

v	0–12.5°	12.5–25°	25–35°	35–50°	50–65°
4	2.83	2.37	1.90	1.83	1.51
8	2.98	2.42	2.03	1.92	1.52
32	3.07	2.51	2.11	2.09	1.57
128	3.12	2.58	2.18	2.19	1.72
512	3.25	2.67	2.28	2.62	1.88
1024	3.40	2.77	2.36	2.69	2.01
2048	3.44	2.83	2.39	2.88	2.25
4096	4.53	2.95	2.45	2.79	2.55

Aluminium Sulphate (Ws. and Sh.).

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 12.5°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
4	51.90	71.81	92.40	107.72	136.5	152.8
8	65.21	89.81	114.44	132.46	166.7	185.7
32	89.50	123.63	158.01	183.51	236.7	266.2
128	121.87	169.38	219.04	266.22	339.9	395.1
512	164.08	230.86	301.01	358.79	497.3	594.6
1024	191.95	271.31	359.16	433.51	613.2	740.2
2048	222.31	317.20	425.03	518.19	746.8	943.0
4096	262.35	378.23	514.06	634.78	936.1	1221.2

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 12.5°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
4	19.8	19.0	18.0	17.0	14.6	12.5
8	24.9	23.7	22.3	20.9	17.8	15.2
32	34.1	32.7	30.7	28.9	25.3	21.8
128	46.5	44.8	42.6	41.9	36.3	32.4
512	62.5	61.0	58.5	56.5	53.1	48.7
1024	73.2	71.7	69.9	68.3	65.5	60.6
2048	84.7	83.9	82.7	81.6	79.8	72.2
4096	100.0	100.0	100.0	100.0	100.0	100.0

Temperature Coefficients in Conductivity Units.

v	0–12.5°	12.5–25°	25–35°	35–50°	50–65°
4	1.59	1.65	1.53	.....	1.09
8	1.97	1.97	1.80	.....	1.27
32	2.73	2.75	2.55	.....	1.97
128	3.80	3.97	4.72	.....	3.67
512	5.34	5.61	5.78	.....	6.49
1024	6.34	7.03	7.44	.....	8.47
2048	7.59	8.63	9.32	.....	13.08
4096	9.27	10.87	12.07	.....	19.01

Temperature Coefficients in Per Cent.

v	0–12.5°	12.5–25°	25–35°	35–50°	50–65°
4	3.06	2.30	1.66	.....	0.80
8	3.02	2.19	1.57	.....	0.76
32	3.05	2.23	1.61	.....	0.83
128	3.12	2.34	2.16	.....	1.08
512	3.25	2.43	1.79	.....	1.31
1024	3.30	2.59	2.07	.....	1.38
2048	3.41	2.72	2.19	.....	1.75
4096	3.53	2.87	2.35	.....	2.03

Ferric Chloride (J. and H.).

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 10°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
2	80.50	104.6	143.6	169.9	.....	.....
4	.....	.....	.....	.....	269.5	327.0
8	127.2	168.5	238.1	285.4	346.9	.....
16	143.4	190.7	274.6	332.7	.....	.....
32	166.7	226.0	328.3	400.4	515.8	1512.5
128	198.9	274.0	401.9	508.9	1037.6	1685.9
512	351.2	563.1	707.2	945.0	1405.4	.....
1024	486.3	688.4	892.4	1130.3	.....	.....
2048	609.7	799.9	1028.2	1235.6	1487.5	1673.6

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 10°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
2	.....	.....	.....	.....	.....	.....
4	.....	.....	.....	.....	.....	.....
8	.....	.....	.....	.....	.....	.....
16	.....	.....	.....	.....	.....	.....
32	.....	.....	.....	.....	.....	.....
128	.....	.....	.....	.....	.....	.....
512	.....	.....	.....	.....	.....	.....
1024	.....	.....	.....	.....	.....	.....
2048	.....	.....	.....	.....	.....	.....

Temperature Coefficients in Conductivity Units.

v	0–10°	10–25°	25–35°	35–50°	50–65°
2	2.41	2.60	2.65	.....	.....
4	.....	.....	.....	.....	.....
8	4.13	4.64	4.73	.....	.....
16	4.73	5.59	5.81	.....	.....
32	5.93	6.82	7.21	.....	.....
128	7.51	8.53	10.70	.....	.....
512	21.1	9.61	23.78	.....	.....
1024	20.2	13.66	23.60	.....	.....

Temperature Coefficients in Per Cent.

v	0–10°	10–25°	25–35°	35–50°	50–65°
2	2.99	2.49	1.85	.....	.....
4	.....	.....	.....	.....	.....
8	3.25	2.75	1.99	.....	.....
16	3.30	2.93	2.12	.....	.....
32	3.56	3.02	2.20	.....	.....
128	3.78	3.11	2.66	.....	.....
512	6.01	1.71	3.36	.....	.....
1024	4.15	1.98	2.64	.....	.....

Ferric Nitrate (J.).

*Molecular Conductivity.**

v	$\mu_v 0°$	$\mu_v 10°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
2	97.68	128.1	181.6	220.7	.....	.....
8	138.2	185.7	266.5	328.2	.....	.....
16	150.7	202.7	295.3	364.3	.....	.....
32	171.4	233.7	342.6	422.6	.....	.....
128	199.5	271.7	399.4	491.4	.....	.....
512	371.3	408.7	705.7	927.0	.....	.....
1024	490.9	571.4	877.7	1116.5	.....	.....
2048	585.2	693.5	961.6	1183.0	.....	.....

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 10°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
2	.....	.....	.....	.....	.....	.....
8	.....	.....	.....	.....	.....	.....
16	.....	.....	.....	.....	.....	.....
32	.....	.....	.....	.....	.....	.....
128	.....	.....	.....	.....	.....	.....
512	.....	.....	.....	.....	.....	.....
1024	.....	.....	.....	.....	.....	.....
2048	.....	.....	.....	.....	.....	.....

Temperature Coefficients in Conductivity Units.

v	0–10°	10–25°	25–35°	35–50°	50–65°
2	3.04	3.57	3.91	.....	.....
8	4.75	5.39	6.17	.....	.....
16	5.20	6.17	6.90	.....	.....
32	6.23	7.26	8.00	.....	.....
128	7.22	8.50	9.20	.....	.....
512	3.74	19.80	22.13	.....	.....
1024	8.05	20.42	23.88	.....	.....
2048	10.83	18.61	22.14	.....	.....

Temperature Coefficients in Per Cent.

v	0–10°	10–25°	25–35°	35–50°	50–65°
2	3.12	2.79	2.15	.....	.....
8	3.44	2.90	2.32	.....	.....
16	3.44	3.04	2.34	.....	.....
32	3.63	3.11	2.34	.....	.....
128	3.62	3.13	2.30	.....	.....
512	1.01	4.84	3.14	.....	.....
1024	1.64	3.57	2.72	.....	.....
2048	1.85	2.68	2.30	.....	.....

*Decomposed at higher temperatures.

Chromic Chloride (Ws. and Sh.).

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 12.5°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
4	86.30	116.97	153.32	199.10	.....	.....
8	104.53	138.83	184.18	243.55	332.3	410.0
32	130.03	182.75	245.00	319.15	431.2	538.5
128	162.34	231.28	313.45	393.62	534.3	681.5
512	188.46	272.50	372.34	465.10	650.9	834.4
1024	200.21	294.55	403.58	504.31	724.2	941.3
2048	214.48	316.60	434.36	543.02	783.9	1015.7
4096	229.73	341.14	467.61	580.16	836.5	1101.4

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 12.5°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
4	37.6	34.3	32.8	34.3	.....	.....
8	45.5	40.7	39.4	42.0	39.7	37.2
32	56.6	53.6	52.4	55.0	51.6	48.9
128	70.7	67.8	67.0	67.9	63.9	61.9
512	82.1	79.9	79.6	80.2	77.9	75.7
1024	87.2	86.4	86.3	86.9	86.6	85.5
2048	93.3	92.9	92.9	93.6	93.8	92.2
4096	100.0	100.0	100.0	100.0	100.0	100.0

Temperature Coefficients in Conductivity Units.

v	0–12.5°	12.5–25°	25–35°	35–50°	50–65°
4	2.45	2.91	4.58	.....	.....
8	2.74	3.63	5.94	.....	5.18
32	4.22	4.98	7.42	.....	7.15
128	5.52	6.57	8.02	.....	9.81
512	6.72	7.99	9.28	.....	12.23
1024	7.54	8.72	10.07	.....	14.47
2048	8.18	9.42	10.87	.....	15.45
4096	8.91	10.12	11.26	.....	17.66

Temperature Coefficients in Per Cent.

v	0–12.5°	12.5–25°	25–35°	35–50°	50–65°
4	2.84	2.49	2.99	.....	.....
8	2.62	2.62	3.23	.....	1.56
32	3.25	2.73	3.03	.....	1.66
128	3.40	2.84	2.55	.....	1.83
512	3.57	2.93	3.95	.....	1.87
1024	3.77	2.96	2.50	.....	1.99
2048	3.82	2.98	2.50	.....	1.53
4096	3.88	2.97	2.51	.....	1.60

Chromic Nitrate (J. and Sh.).

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 10°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
2	87.17	112.1	154.7	183.6	231.8	278.5
8	117.6	153.1	214.0	256.5	335.9	416.3
16	129.7	169.7	238.8	287.4	380.6	473.8
32	138.5	181.9	258.1	312.6	420.5	531.2
128	149.0	198.9	286.2	350.7	511.2	658.9
512	188.7	253.0	370.2	459.4	634.7	821.2
1024	203.0	274.0	412.9	511.8	692.0	894.4
2048	210.4	295.3	438.0	550.9	767.0	999.0

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 10°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
2	41.4	38.0	35.3	33.3	30.2	27.3
8	55.9	51.9	48.9	46.6	43.8	41.7
16	61.6	57.5	54.5	52.2	49.6	47.4
32	65.8	61.8	58.9	56.8	54.8	53.2
128	70.8	67.4	65.3	63.7	66.6	65.9
512	89.7	85.7	84.5	83.6	82.7	82.2
1024	96.5	92.8	94.3	93.4	90.2	89.5
2048	100.0	100.0	100.0	100.0	100.0	100.0

Temperature Coefficients in Conductivity Units.

v	0–10°	10–25°	25–35°	35–50°	50–65°
2	2.49	2.84	2.89	.....	3.11
8	3.55	4.06	4.25	.....	5.36
16	4.00	4.61	4.06	.....	6.22
32	4.34	5.08	5.45	.....	7.38
128	4.99	5.82	6.45	.....	9.85
512	6.43	7.81	8.92	.....	12.43
1024	7.10	9.26	9.89	.....	13.49
2048	8.49	9.51	11.29	.....	15.47

Temperature Coefficients in Per Cent.

v	0–10°	10–25°	25–35°	35–50°	50–65°
2	2.86	2.53	1.87	.....	1.34
8	3.02	2.65	1.99	.....	1.59
16	3.08	2.72	2.04	.....	1.63
32	3.13	2.79	2.11	.....	1.75
128	3.35	2.93	2.25	.....	1.92
512	3.41	3.09	2.41	.....	1.96
1024	3.50	3.38	2.40	.....	1.95
2048	4.04	3.22	2.58	.....	2.01

Chromic Sulphate (Ws. and Sh.)

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 12.5°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
4	58.14	78.48	99.64	116.41	.....	.....
8	77.85	103.64	130.18	151.17	121.1	139.9
32	120.59	158.67	197.34	230.37	209.7	228.5
128	169.08	225.60	283.56	338.67	328.0	370.6
512	215.36	292.66	376.23	472.16	488.8	585.3
1024	240.48	329.96	459.83	561.76	585.4	732.1
2048	293.38	405.65	534.55	708.14	713.3	905.2
4096	315.39	445.16	598.46	808.29	880.9	1132.4

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 12.5°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
4	18.4	17.6	16.6	14.4	.....	.....
8	24.7	23.3	21.7	18.7	14.5	12.4
32	38.2	35.6	33.0	28.5	23.8	20.2
128	53.6	50.7	47.4	41.9	37.2	32.7
512	68.3	65.7	62.8	58.5	55.5	51.7
1024	76.2	74.1	76.8	69.5	66.5	64.6
2048	93.0	91.1	89.3	87.7	80.9	80.0
4096	100.0	100.0	100.0	100.0	100.0	100.0

Temperature Coefficients in Conductivity Units.

v	0–12.5°	12.5–25°	25–35°	35–50°	50–65°
4	1.63	1.69	1.68	.....	0.79
8	2.06	2.12	2.10	.....	1.25
32	3.05	2.46	3.30	.....	2.84
128	4.52	4.64	5.51	.....	6.43
512	6.18	4.69	9.59	.....	9.78
1024	7.16	10.39	10.10	.....	12.79
2048	8.98	10.31	17.36	.....	16.77
4096	10.38	12.26	20.98	.....	.....

Temperature Coefficients in Per Cent.

v	0–12.5°	12.5–25°	25–35°	35–50°	50–65°
4	2.80	2.15	1.69	.....	.....
8	2.65	2.05	1.61	.....	0.62
32	2.54	1.55	1.67	.....	0.60
128	2.67	2.06	1.94	.....	0.86
512	2.87	1.60	2.55	.....	1.32
1024	2.98	3.15	2.22	.....	1.67
2048	3.06	2.54	3.25	.....	1.78
4096	3.29	2.75	3.51	.....	1.94

Uranyl Chloride (Ws. and W.).

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 12.5°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
4	101.45	139.09	180.45	214.70	274.6	333.2
8	110.48	157.64	206.01	246.51	318.9	387.8
32	133.05	186.56	246.12	297.84	380.3	473.2
128	148.39	209.75	279.00	339.40	439.4	548.5
512	155.98	220.70	296.56	360.44	491.1	610.6
1024	161.02	231.37	311.92	383.88	.....	.....
2048	168.42	242.69	328.24	405.98	546.8	693.7
4096	174.98	254.22	348.16	433.68	.....	.....

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 12.5°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
4	58.0	54.7	51.8	49.5	.....	.....
8	63.1	62.0	59.2	56.8	.....	.....
32	76.0	73.4	70.7	68.7	.....	.....
128	84.8	82.5	80.2	78.2	.....	.....
512	89.1	86.8	85.2	83.1	.....	.....
1024	92.0	91.0	89.6	88.5	.....	.....
2048	96.3	95.5	94.3	93.6	.....	.....
4096	100.0	100.0	100.0	100.0	.....	.....

Temperature Coefficients in Conductivity Units.

v	0–12.5°	12.5–25°	25–35°	35–50°	50–65°
4	3.01	3.31	3.43	3.99	3.91
8	3.77	3.87	4.05	4.82	4.59
32	4.28	4.76	5.17	5.50	6.19
128	4.91	5.54	6.04	6.66	7.27
512	5.18	6.07	6.39	.....	7.97
1024	5.63	6.44	7.20	.....	.....
2048	5.94	6.84	7.77	.....	9.79
4096	6.34	7.52	8.55	.....	.....

Temperature Coefficients in Per Cent.

v	0–12.5°	12.5–25°	25–35°	35–50°	50–65°
4	2.97	2.38	1.90	1.86	1.42
8	3.41	2.46	1.97	1.95	1.44
32	3.22	2.55	2.10	1.85	1.63
128	3.31	2.64	2.17	1.96	1.65
512	3.32	2.75	2.16	.....	1.62
1024	3.50	2.78	2.31	.....	.....
2048	3.53	2.82	2.37	.....	1.97
4096	3.62	2.96	2.46	.....	.....

Uranyl Nitrate (Ws. and Hw.).

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 12.5°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
4	74.91	102.01	132.91	158.84	199.01	245.03
8	83.44	114.71	150.57	181.20	226.59	277.69
32	97.22	136.35	180.64	219.38	279.42	345.77
128	110.14	153.84	207.89	254.21	327.08	406.32
512	116.33	166.65	224.95	277.35	376.95	476.52
1024	123.14	177.76	241.47	298.63	404.71	514.08
2048	128.92	187.20	255.38	317.44	422.85	538.35
4096	136.77	200.10	274.50	343.09	467.92	596.77

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 12.5°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
4	54.8	51.0	48.4	46.3	42.5	41.1
8	61.9	57.3	54.9	52.8	48.4	46.5
32	71.1	68.1	65.8	63.9	59.7	57.9
128	80.5	77.9	75.8	74.1	69.9	68.1
512	85.0	83.3	82.0	80.8	80.6	79.8
1024	90.0	88.8	88.0	87.1	86.5	86.1
2048	94.2	93.6	93.1	92.5	90.4	90.2
4096	100.0	100.0	100.0	100.0	100.0	100.0

Temperature Coefficients in Conductivity Units.

v	0–12.5°	12.5–25°	25–35°	35–50°	50–65°
4	2.17	2.47	2.59	2.68	3.07
8	2.50	3.07	3.06	3.03	3.41
32	3.13	3.54	3.87	4.00	4.42
128	3.66	4.16	4.63	4.86	5.28
512	4.03	4.66	5.24	6.64	6.64
1024	4.37	5.10	5.72	7.07	7.29
2048	4.66	5.46	6.21	7.03	7.70
4096	5.07	5.95	6.86	8.32	8.59

Temperature Coefficients in Per Cent.

v	0–12.5°	12.5–25°	25–35°	35–50°	50–65°
4	2.90	2.42	1.95	1.69	1.54
8	3.00	2.68	2.03	1.67	1.50
32	3.22	2.60	2.14	1.82	1.58
128	3.32	2.67	2.23	1.91	1.61
512	3.47	2.80	2.33	2.39	1.76
1024	3.55	2.87	2.37	2.37	1.80
2048	3.62	2.92	2.43	2.22	1.82
4096	3.71	2.97	2.50	2.43	1.84

Uranyl Sulphate (Ws. and Hw.).

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 12.5°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
8	78.13	99.77	120.82	136.43	172.5	189.9
32	100.65	129.52	156.80	176.52	215.3	231.0
128	128.62	166.72	203.02	229.42	279.5	300.1
512	157.54	207.90	257.69	295.20	369.5	403.7
1024	175.68	235.28	296.95	343.01	421.7	471.0
2048	191.68	260.77	332.57	391.00	498.9	562.6
4096	203.33	285.05	373.65	446.33	570.7	667.9

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 12.5°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
8	38.4	35.0	32.3	30.6	30.2	28.4
32	49.5	45.4	42.0	39.6	37.7	34.6
128	63.2	58.5	54.3	51.4	49.0	44.9
512	77.5	72.9	69.0	66.2	64.7	60.4
1024	86.4	82.5	79.5	76.9	73.9	70.5
2048	94.2	91.5	89.0	87.6	87.4	84.2
4096	100.0	100.0	100.0	100.0	100.0	100.0

Temperature Coefficients in Conductivity Units.

v	0–12.5°	12.5–25°	25–35°	35–50°	50–65°
8	1.73	1.68	1.56	.....	1.16
32	2.31	2.18	1.97	.....	1.05
128	3.05	2.90	2.64	.....	1.37
512	4.03	3.98	3.75	.....	2.28
1024	4.77	4.93	4.61	.....	3.29
2048	5.53	5.74	5.84	.....	4.25
4096	6.54	7.09	7.27	.....	6.48

Temperature Coefficients in Per Cent.

v	0–12.5°	12.5–25°	25–35°	35–50°	50–65°
8	2.22	1.68	1.29	.....	0.67
32	2.30	1.68	1.26	.....	0.49
128	2.37	1.74	1.30	.....	0.49
512	2.56	1.91	1.46	.....	0.62
1024	2.72	2.10	1.55	.....	0.78
2048	2.89	2.20	1.76	.....	0.85
4096	3.22	2.49	1.95	.....	1.14

Uranyl Acetate (Ws.).

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 12.5°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
8	30.59	42.75	56.53	68.12	.....	.....
32	39.65	55.08	72.25	86.67	.....	.....
128	51.48	70.66	91.34	108.52	.....	.....
512	63.57	86.06	110.47	129.06	.....	.....
1024	70.13	94.74	120.37	141.12	.....	.....
2048	76.81	103.65	131.78	154.46	.....	.....
4096	83.75	113.81	145.10	170.54	.....	.....

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 12.5°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
8	36.5	37.6	39.0	40.0	.....	.....
32	47.3	48.4	48.8	50.8	.....	.....
128	61.5	62.1	63.0	63.7	.....	.....
512	75.9	75.6	76.1	75.7	.....	.....
1024	83.7	83.3	83.0	82.8	.....	.....
2048	91.7	91.1	90.8	90.6	.....	.....
4096	100.0	100.0	100.0	100.0	.....	.....

Temperature Coefficients in Conductivity Units.

v	0–12.5°	12.5–25°	25–35°	35–50°	50–65°
8	0.97	1.10	1.16	.....	.....
32	1.23	1.37	1.44	.....	.....
128	1.53	1.65	1.72	.....	.....
512	1.80	1.95	1.86	.....	.....
1024	1.97	2.05	2.08	.....	.....
2048	2.15	2.25	2.27	.....	.....
4096	2.41	2.50	2.54	.....	.....

Temperature Coefficients in Per Cent.

v	0–12.5°	12.5–25°	25–35°	35–50°	50–65°
8	3.12	2.57	2.05	.....	.....
32	3.10	2.49	1.99	.....	.....
128	2.97	2.34	1.88	.....	.....
512	2.83	2.26	1.68	.....	.....
1024	2.81	2.16	1.73	.....	.....
2048	2.80	2.17	1.72	.....	.....
4096	2.88	2.20	1.75	.....	.....

Hydrochloric Acid (W.)

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 12.5°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
4	223.3	285.9	348.2	397.9	.....	.....
8	227.0	292.2	357.0	407.1	.....	.....
16	231.8	298.7	365.2	415.5	.....	.....
32	235.0	303.3	370.7	423.4	.....	.....
128	238.8	309.0	379.3	433.3	.....	.....
512	235.5	304.2	374.7	428.3	.....	.....
1024	221.5	287.7	353.4	405.3	.....	.....

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 12.5°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
4	93.5	92.5	91.8	91.8	.....	.....
8	95.1	94.6	94.1	93.9	.....	.....
16	97.1	96.7	96.3	95.9	.....	.....
32	98.4	98.2	97.7	97.7	.....	.....
128	100.0	100.0	100.0	100.0	.....	.....

Temperature Coefficients in Conductivity Units.

v	0–12.5°	12.5–25°	25–35°	35–50°	50–65°
4	5.01	4.98	4.97	.....	.....
8	5.22	5.18	5.01	.....	.....
16	5.35	5.32	5.03	.....	.....
32	5.46	5.39	5.27	.....	.....
128	5.62	5.62	5.40	.....	.....
512	5.50	5.64	5.36	.....	.....
1024	5.30	5.26	5.19	.....	.....

Temperature Coefficients in Per Cent.

v	0–12.5°	12.5–25°	25–35°	35–50°	50–65°
4	2.24	1.74	1.43	.....	.....
8	2.30	1.77	1.40	.....	.....
16	2.31	1.78	1.38	.....	.....
32	2.37	1.77	1.42	.....	.....
128	2.35	1.82	1.42	.....	.....
512	2.34	1.85	1.43	.....	.....
1024	2.39	1.83	1.47	.....	.....

Nitric Acid (W.).

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 12.5°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
4	222.4	284.3	344.4	390.8	.....	.....
8	226.9	290.5	354.4	402.7	.....	.....
16	231.3	296.3	362.0	411.8	.....	.....
32	235.4	301.7	368.7	418.6	.....	.....
128	238.3	308.2	376.6	429.4	.....	.....
512	236.7	306.0	373.9	426.9	.....	.....
1024	231.4	299.9	366.5	419.8	.....	.....

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 12.5°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
4	93.3	92.2	91.4	91.0	.....	.....
8	95.2	94.3	94.1	93.8	.....	.....
16	97.1	96.1	96.1	95.9	.....	.....
32	98.8	97.9	97.6	97.5	.....	.....
128	100.0	100.0	100.0	100.0	.....	.....

Temperature Coefficients in Conductivity Units.

v	0–12.5°	12.5–25°	25–35°	35–50°	50–65°
4	4.95	4.81	4.64	.....	.....
8	5.09	5.11	4.83	.....	.....
16	5.20	5.25	4.98	.....	.....
32	5.30	5.36	4.99	.....	.....
128	5.59	5.47	5.28	.....	.....
512	5.54	5.43	5.30	.....	.....
1024	5.48	5.33	5.33	.....	.....

Temperature Coefficients in Per Cent.

v	0–12.5°	12.5–25°	25–35°	35–50°	50–65°
4	2.23	1.69	1.35	.....	.....
8	2.24	1.76	1.36	.....	.....
16	2.25	1.77	1.38	.....	.....
32	2.25	1.78	1.35	.....	.....
128	2.34	1.77	1.40	.....	.....
512	2.34	1.77	1.42	.....	.....
1024	2.37	1.78	1.45	.....	.....

Sulphuric Acid (W.).

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 16.3°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
4	292.9	382.8	419.3	457.2	.....	.....
8	303.9	393.9	431.5	471.7	.....	.....
16	323.6	417.3	456.6	498.0	.....	.....
32	347.2	450.0	491.4	533.6	.....	.....
128	403.6	535.6	589.4	646.2	.....	.....
512	442.7	601.1	675.2	753.0	.....	.....
2048	449.2	622.4	709.9	814.4	.....	.....
8192	441.6	618.2	708.6	816.3	.....	.....

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 16.3°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
4	65.2	61.5	59.1	56.1	.....	.....
8	67.7	63.3	60.8	57.9	.....	.....
16	72.0	67.0	64.3	61.2	.....	.....
32	77.3	72.3	69.2	65.5	.....	.....
128	89.8	86.1	83.0	79.3	.....	.....
512	98.6	96.6	95.1	92.5	.....	.....
2048	100.0	100.0	100.0	100.0	.....	.....

Temperature Coefficients in Conductivity Units.

v	0–16.3°	16.3–25°	25–35°	35–50°	50–65°
4	5.52	4.20	3.79	.....	.....
8	5.52	4.32	4.02	.....	.....
16	5.75	4.52	4.14	.....	.....
32	6.31	4.76	4.22	.....	.....
128	8.10	6.18	5.68	.....	.....
512	9.72	8.52	7.78	.....	.....
2048	10.63	10.06	10.45	.....	.....
8192	10.83	10.39	10.77	.....	.....

Temperature Coefficients in Per Cent.

v	0–16.3°	16.3–25°	25–35°	35–50°	50–65°
4	1.88	1.10	0.90	.....	.....
8	1.49	1.10	0.93	.....	.....
16	1.78	1.08	0.91	.....	.....
32	1.82	1.06	0.86	.....	.....
128	2.01	1.15	0.96	.....	.....
512	2.19	1.42	1.15	.....	.....
2048	2.37	1.62	1.47	.....	.....
8192	2.45	1.68	1.52	.....	.....

DISCUSSION OF THE RESULTS.

THE CONDUCTIVITY MEASUREMENTS.

The conductivities of about 110 salts and mineral acids have been measured and the results are herein recorded. These have been studied from about the most concentrated solution that could be prepared, up to a volume of from 1000 to 4000. The temperature range is from 0° to 65°. Salts of nearly all of the more common metals have been included within this work.

It is almost self-evident that in an investigation of this scope certain peculiarities would be presented by some of the substances studied.

The salts of lithium crystallize with more water than the corresponding salts of the other alkali elements. This means that the lithium ion is more hydrated in aqueous solution than the potassium, sodium, or ammonium ion. The result is that the lithium ion moves more slowly than the other alkali ions, and, consequently, the conductivities of lithium salts are smaller than those of the corresponding salts of sodium and potassium. Before we had the solvate theory it was very difficult to account for the fact that the lithium ion, which has a much smaller mass and smaller atomic volume than either sodium or potassium, should have a smaller velocity. But we now have the explanation of this fact. The larger conductivity of lithium sulphate, especially at high dilutions, as compared with other salts of lithium, is due to this being a ternary electrolyte, while the other three salts are binary electrolytes.

The salts of sodium with the simpler acids call for no special comment. The conductivities are larger than those of the corresponding salts of lithium, since the sodium ion is less hydrated than lithium, and, consequently, moves faster through the solution. Sodium carbonate has very great conductivity, especially at high dilution and elevated temperatures. This is undoubtedly due to large hydrolysis under these conditions. The very large conductivity of disodium phosphate is also probably due to hydrolysis. Sodium ammonium acid phosphate (microcosmic salt) begins, in fairly concentrated solutions, to give off ammonia at 25°, and this is still more marked at 35°.

The unusually high conductivity of sodium ferrocyanide, especially at $N = 1024$ and 65°, is due in part to the large number of ions yielded by this substance, and in part to hydrolytic dissociation.

The salts of potassium have somewhat larger conductivity than those of sodium. The potassium ion has less hydrating power than sodium, as is shown by the fact that potassium salts show less tendency to crystallize with water than sodium. Notwithstanding the greater mass of potassium, the ion moves faster than sodium, since it drags less water with it through the solution. This would increase the conductivity of potassium salts over that of sodium. The large conductivities of potassium carbonate, dipotassium phosphate, and tripotassium phosphate are due to hydrolysis. The large values for potassium nickel sulphate, and for both the violet and green potassium chromium sulphates are due chiefly to the large number of ions into which these compounds dissociate. It was shown some time ago by Jones and

Mackay* "that compounds of this type first break down into the constituent sulphates, especially in dilute solution, and these then dissociate as if they alone were present in the solution."

Potassium permanganate underwent slight decomposition, especially at more elevated temperatures. The high conductivity of potassium ferrocyanide is explained by the large number of ions into which it breaks down.

Ammonium salts with the ordinary mineral acids crystallize with little or no water. This means that the ammonium ion is very slightly hydrated in aqueous solution. Ammonium salts, in general, conduct to just about the same extent as potassium salts. Tetraethylammonium iodide decomposes slowly around 50 degrees.

Turning to the bivalent metals, let us consider, first, salts of calcium, strontium, barium, and magnesium. Most of the salts of these metals with the ordinary mineral acids crystallize with six molecules of water; calcium nitrate, which crystallizes with four molecules of water; strontium nitrate, which crystallizes anhydrous; barium chloride and bromide, which crystallize with two molecules of water each, and barium nitrate, which crystallizes without water, are exceptions.

Earlier work in this laboratory on the approximate composition of the hydrates formed by various substances† has shown that salts of calcium, strontium, barium, and magnesium hydrate to approximately the same extent, and that all four of these elements have very great hydrating power. While the masses of the atoms of these four elements vary from magnesium = 24.36, calcium = 40.1, strontium = 87.6, to barium = 137.4, yet the amounts of water with which these substances in solution are combined are so large that the total masses of the four ions when hydrated as they are, especially in dilute solution, are not very different. Further, the atomic volumes of these four substances are not very different, magnesium being somewhat less than the other three. Ionic velocity is a function of the ionic volume and ionic mass of the hydrated ions. We should, therefore, expect the velocities of these four ions to be just about the same, and such is the fact. The velocities are: Mg = 58, Ca = 62, Sr = 63, and Ba = 64.

Conductivity is a function of the number and velocities of the ions taking part in the conduction of the current. Since salts of the above four elements are dissociated to just about the same extent, it follows that salts of calcium, strontium, barium, and magnesium should give conductivities of the same order of magnitude. An examination of the results will show this to be the case. The salts of these elements with the organic acids—formic and acetic—are probably somewhat hydrolyzed, especially the salts of acetic acid. The formate showed a short hydrolysis time factor, while the acetate precipitated a small amount of barium hydroxide on the platinum plates.

Zinc nitrate, like magnesium nitrate, crystallizes with six molecules of water and the two have very nearly the same conductivity. There was evidence that zinc nitrate underwent slight hydrolysis. Zinc sulphate and magnesium sulphate crystallize with the same amount of water—each with seven molecules—and they have very nearly the same conductivities. Zinc acetate was undoubtedly strongly hydrolyzed, especially at the high dilutions and high temperatures. There was an appreciable odor of acetic acid in these solutions.

*Amer. Chem. Journ., **19**, 83 (1897). †Carnegie Institution Publication No. 60.

The salts of cadmium present several points of interest. The chloride crystallizes with two molecules of water, while the bromide and iodide crystallize without water. Notwithstanding the small hydrating power of the cadmium ion, its salts conduct less than the corresponding compounds of calcium, strontium, barium, and magnesium. The explanation of this is well known. The halides of cadmium are much less dissociated than the halides of the metals related chemically to it, hence the smaller conductivity.

The conductivities of the salts of manganese, nickel, and cobalt call for no special comment. Manganese nitrate underwent some decomposition at 35°. Nickel acetate underwent hydrolysis, the solution having the odor of acetic acid. Salts of these three metals give conductivities that are of the same order of magnitude, and are, indeed, very nearly equal. This would be expected from the relative hydrating power of the manganese, cobalt, and nickel ions.

The above comments also apply to the salts of copper that were investigated. At 65° these salts, in general, underwent decomposition, and the work, therefore, could not be extended to this temperature. The salts of aluminium, iron, and chromium are all quaternary electrolytes, *i. e.*, the molecule breaks down into four ions. The conductivities of these substances are, therefore, large. Many of these salts undergo hydrolysis at the higher temperatures. This is so pronounced with the salts of iron that they could not be studied at all at the higher temperatures. The salts of aluminium, iron, and chromium crystallize with large amounts of water, *i. e.*, these ions have great hydrating power. The order of magnitude of this power can be seen from the earlier work in this laboratory.* That these substances have very large temperature coefficients of conductivity will be seen a little later.

The salts of uranyl undergo hydrolysis, especially at the more elevated temperatures. To this hydrolysis there is an appreciable time factor. This accounts for the difficulties encountered by different workers in obtaining concordant results.

The relations pointed out above will be seen from the table of molecular conductivities on pages 70 and 71. Here the results are given at two dilutions widely removed from one another, and at three temperatures as widely different as possible.

A DEHYDROLYTIC TIME FACTOR.

An observation of some importance was made by Mr. Shaeffer. He took four parts of a $n/32$ solution of chromium chloride. One of these was kept at room temperature. A second was heated for two hours to 50°, a third for the same time to 65°, while a fourth was heated for two hours to 90°. All four solutions were then brought to the same temperature and their conductivities determined. The conductivities of all four solutions were taken at 35°, at 50°, and at 65°, and the results are given in the following table:

CHROMIUM CHLORIDE.

v	T	Not heated	Heated to 50°	Heated to 65°	Heated to 90°
32	35°	330.5	331.4	342.0	415.7
32	50°	424.6	429.7	439.0	519.0
32	65°	532.4	536.9	544.6	624.2

*Carnegie Institution of Washington Publication No. 60, pp. 87–93.

MOLECULAR CONDUCTIVITIES.

	0°		25°		65°	
	$v=8$	$v=1024$	$v=8$	$v=1024$	$v=8$	$v=1024$
LiCl	47.27	56.08	88.41	107.2	167.7	208.3
LiBr	49.84	57.97	89.78	109.9	170.4	.....
$LiNO_3$	43.83	52.0	79.71	98.0	157.7	197.8
Li_2SO_4	66.74	108.1	128.4	211.4	242.7	425.5
NaCl	53.5	61.6	98.5	115.4	184.5	225.5
NaBr	55.36	.....	100.3	.....	184.1	222.8
NaI	55.26	63.14	100.4	116.4	187.5	234.1
$NaNO_3$	50.27	59.39	111.3	138.5	171.4	213.2
$NaClO_3$	47.4	56.2	86.7	104.1	164.4	211.3
$NaClO_4$	49.4	56.8	90.2	105.4	.....	.....
Na_2SO_4	78.51	119.65	146.4	226.34	274.3	.....
Na_2CO_3	70.7	110.8	137.8	218.1	271.9	439.5
Na_2HPO_4	.....	91.9	.....	183.7	.....	393.2
$NaNH_4HPO_4$	65.6	104.7	.....	193.6	.....	.....
$Na_4Fe(CN)_6$	136.7	253.4	259.2	482.4	469.61	939.35
$Na_2B_4O_7$	.....	79.20	.....	153.4	.....	.....
CH_3COONa	34.30	40.65	66.25	79.12	131.7	.....
KCl	66.47	75.14	118.6	137.0	215.9	258.3
KBr	68.01	79.23	121.3	143.5	218.1	260.3
KI	68.45	77.77	120.7	141.8	221.2	268.1
KNO_3	61.94	76.31	111.0	139.6	199.6	245.2
$KClO_3$	58.9	70.6	104.7	127.8	192.1	241.5
$KClO_4$	.....	72.0	.....	130.7	.....	240.6
K_2SO_4	101.9	145.0	183.6	268.0	332.8	513.1
$KHSO_4$	182.1	.....	254.2	.....	313.3	.....
K_2CO_3	98.74	.....	180.9	.....	291.17	.....
K_2HPO_4	79.19	109.35	143.34	200.52	.....	.....
K_3PO_4	116.6	192.1	217.2	362.5	415.5	697.3
$KNaSO_4$	96.1	140.8	170.6	259.2	272.73	469.31
$KNi(SO_4)_2$	122.6	235.5	221.9	437.1	407.67	850.20
$KAl(SO_4)_2$	78.9	177.8	140.3	332.7	240.6	.....
$KCr(SO_4)_2$ violet	75.8	186.6	135.3	369.6	242.04	785.37
$KCr(SO_4)_2$ green	101.0	229.7	158.4	399.6	248.10	771.94
$KMnO_4$	59.34	64.65	104.36	113.95	193.58	215.95
K_2CrO_4	111.3	150.1	196.0	276.2	357.7	.....
$K_2Cr_2O_7$	109.1	133.6	195.5	240.6	352.9	.....
$K_4Fe(CN)_6$	168.8	295.1	305.1	546.5	543.0	.....
CH_3COOK	48.6	58.33	88.43	106.84	.....	203.7
CNSK	62.48	72.25	110.9	131.5	201.8	.....
NH_4Cl	66.17	74.84	118.6	137.8	217.1	269.7
NH_2Br	69.36	77.06	123.6	140.9	220.9	267.6
$N(C_2H_5)_4I$	38.6	53.3	72.8	99.3	.....	.....
NH_4NO_3	64.35	74.69	113.38	134.43	204.3	249.3
$(NH_4)_2SO_4$	98.06	143.84	179.57	267.62	325.2	.....
NH_4HSO_4	183.40	295.22	258.00	483.51	303.2	794.5
$NH_4Al(SO_4)_2$	80.00	181.0	143.1	342.4	236.5	.....
$NH_4Cr(SO_4)_2$ violet	77.5	187.0	137.3	372.0	244.97	754.79
$NH_4Cr(SO_4)_2$ green	103.6	215.6	162.9	386.2	250.70	789.57
$(NH_4)_2Cu(SO_4)_2$	122.7	236.0	220.7	442.6	383.1	850.8
$CaCl_2$	95.3	126.5	172.5	236.1	318.7	.....
$CaBr_2$	97.74	126.3	177.5	236.5	339.4	477.18
$Ca(NO_3)_2$	85.50	125.7	157.3	235.0	287.8	.....
$CaCrO_4$	57.7	111.6	105.8	208.8	187.81	401.22
$Ca(HCOO)_2$	67.2	.....	124.5	.....	230.8	.....
$SrCl_2$	92.97	129.1	173.7	242.8	324.4	463.3
$SrBr_2$	100.00	129.1	180.6	239.6	343.7	.....
$Sr(NO_3)_2$	84.33	126.9	154.1	233.7	288.0	.....
$Sr(CH_3COO)_2$	56.51	91.18	106.96	177.44	193.8	.....
$BaCl_2$	99.06	130.9	179.00	243.4	322.3	.....
$BaBr_2$	103.4	133.8	187.4	249.9	340.1	484.6

MOLECULAR CONDUCTIVITIES—Continued.

	0°		25°		65°	
	$v=8$	$v=1024$	$v=8$	$v=1024$	$v=8$	$v=1024$
$Ba(NO_3)_2$	76.37	127.4	146.4	234.2	276.2	.....
$Ba(HCOO)_2$	72.22	103.0	133.4	184.0	245.4	385.5
$Ba(CH_3COO)_2$	59.05	92.63	113.3	180.5	.....	.....
$MgCl_2$	87.6	118.3	162.1	224.9	303.8	.....
$MgBr_2$	93.73	122.8	170.64	230.94	324.4	.....
$Mg(NO_3)_2$	88.91	120.68	160.86	224.49	298.1	.....
$MgSO_4$	45.70	102.7	85.62	198.3	102.4	240.9
$Mg(HCOO)_2$	58.15	94.03	109.29	176.23	201.4	.....
$Mg(CH_3COO)_2$	46.35	80.38	89.79	158.95	171.2	.....
$Zn(NO_3)_2$	87.6	117.1	157.2	216.6	289.67	415.20
$ZnSO_4$	43.20	104.7	80.01	197.8	.....	.....
$Zn(CH_3COO)_2$	37.7	79.9	66.6	156.7	100.61	298.74
$CdCl_2$	45.32	113.78	79.30	212.53	139.6	.....
$CdBr_2$	37.80	110.69	70.44	208.48	128.5	.....
CdI_2	24.31	96.31	48.44	188.66	94.61	.....
$MnCl_2$	84.98	114.9	156.7	216.8	293.7	468.4
$Mn(NO_3)_2$	83.1	105.4	144.3	195.8	.....	.....
$MnSO_4$	44.11	107.13	79.77	202.94	130.0	.....
$NiCl_2$	89.51	120.7	164.8	229.0	301.5	.....
$Ni(NO_3)_2$	87.35	115.8	157.9	214.3	.....	.....
$NiSO_4$	40.58	100.4	77.06	193.8	135.7	.....
$NiCH_3COO$	38.95	78.65	74.10	153.9	138.32	336.46
$CoCl_2$	87.75	116.8	161.5	221.1	302.5	.....
$CoBr_2$	95.04	120.80	171.3	231.56	315.7	.....
$Co(NO_3)_2$	87.07	116.1	157.9	215.3	291.4	.....
$CoSO_4$	42.06	101.9	78.37	196.9	137.5	.....
$Co(CH_3COO)_2$	41.31	78.88	78.37	155.3	131.2	.....
$AgNO_3$	56.01	.....	99.80	.....	184.8	230.7
$CuCl_2$	87.57	123.0	158.3	232.2	.....	.....
$CuBr_2$	91.31	125.4	169.6	236.6	.....	.....
$Cu(NO_3)_2$	86.48	119.8	156.7	222.9	.....	.....
$CuSO_4$	42.30	105.85	77.33	202.57	124.5	.....
$PbCl_2$	.....	136.89	.....	253.96	.....	476.90
$Pb(NO_3)_2$	71.12	133.6	139.8	247.4	267.8	477.7
$Pb(CH_3COO)_2$	16.0	74.5	31.2	139.1	58.12	255.53
$AlCl_3$	120.22	184.58	220.86	360.56	419.1	796.7
$Al(NO_3)_3$	115.67	173.45	206.89	332.20	393.6	750.5
$Al_2(SO_4)_3$	65.21	191.95	114.44	359.16	185.7	740.2
$FeCl_3$	127.2	486.3	238.1	892.4	.....	.....
$Fe(NO_3)_3$	138.2	490.9	266.5	877.7	.....	.....
$CrCl_3$	104.53	200.21	184.18	403.58	410.0	941.3
$Cr(NO_3)_3$	117.6	203.0	214.0	412.9	416.3	894.4
$Cr_2(SO_4)_3$	77.85	240.48	130.18	459.83	139.9	732.1
UO_2Cl_2	110.48	161.02	206.01	311.92	387.8	548.5
$UO_2(NO_3)_2$	83.44	123.14	150.57	241.47	277.69	514.08
UO_2SO_4	78.13	175.68	120.82	296.95	.....	.....
$UO_2(CH_3COO)_2$	30.59	70.13	56.53	120.37	.....	.....
HCl	227.0	221.5	357.0	353.4	.....	.....
HNO_3	226.9	231.4	354.4	366.5	.....	.....
H_2SO_4	303.9	.....	431.5	.....	.....	.....

The vessels used for holding the solutions were of Jena glass, which had been treated for months to remove all soluble matter. The increase in conductivity in the heated solutions could, therefore, not have been due to matter dissolved from the glass vessels. It will be seen that the solutions which had been heated had higher conductivity than those which had not. This is especially true of the solution which had been heated to 90°. This was undoubtedly due to hydrolytic dissociation of the salt into acid and base, and these did not completely recombine on cooling the solution to the initial temperature.

The same process was repeated, using a solution of chromium chloride which was $n/512$, heating one part to 50°, another to 65°, still another to 90°, then cooling all down to room temperature, and measuring the conductivities at the following temperatures:

Chromium Chloride.

v	T	Not heated	Heated to 50°	Heated to 65°	Heated to 90°
512	35°	487.4	489.5	500.6	559.7
512	50°	652.2	656.7	667.7	724.6
512	65°	842.5	843.8	856.6	915.1

The results for the more dilute solutions are of the same general character as those for the more concentrated.

To throw some light on the length of time required for the acid and base to recombine, the following experiment was carried out: The $n/512$ solution of chromium chloride, which had been heated to 90°, was cooled to room temperature and allowed to stand for 20 days. It was then warmed to 35°, and its conductivity determined. The value found was 508, while the value found shortly after heating was 559.9. The unheated solution gave a conductivity of 487.4. It is thus obvious that in 20 days the hydrolysis had not all disappeared.

A similar experiment with $n/512$ chromium chloride, which had been heated to 90°, cooled to room temperature and allowed to stand 20 days, and then warmed to 65° and its conductivity determined, gave the value 885. The conductivity shortly after heating was 915.1. The conductivity of the unheated solution was 842.5. This shows that the dehydrolysis, in this case, was not complete even after the solution had stood for 20 days. We propose to study these changes quantitatively in the near future, and see how long it requires for the completion of the dehydrolysis, in the cases especially of those salts which are strongly hydrolyzed.

The bearing of these facts on the purification of salts by recrystallization from water is important. The usual method of purification, by preparing a saturated solution at a higher temperature and then lowering the temperature and allowing the salt to crystallize is open to objection, especially for those salts which are strongly hydrolyzed by water. It has been supposed that when the solution in question was cooled down, the free acid and free base recombined. This work shows that such is not the case. There remains in the solution, for a long time, some free acid; and when the salt crystallizes from such a solution it is likely to occlude some of the free acid.

The better method for purifying hydrolyzable salts by crystallization is to make the saturated solution at low temperatures, and then remove the water by an air-pump or over sulphuric acid. It is well known that hydrolysis increases very rapidly with rise in temperature.

DISSOCIATION OF THE VARIOUS SALTS.

The dissociation of the various salts can be best compared and studied by bringing together the results for the different salts under comparable conditions. For some of the salts it is impossible at present to give their true dissociations. This is due to the fact that they underwent more or less hydrolysis, and the true value of μ_∞ for the unhydrolyzed salt was not obtained. In some other cases the dissociation may not have been complete, even in the most dilute solution investigated. In such cases the true value of μ_∞ would not have been reached. However, most of the dissociations given are nearly correct.

Dissociations of the Various Salts.

	0°		25°		65°	
	$v=8$	$v=1024$	$v=8$	$v=1024$	$v=8$	$v=1024$
LiCl	82.4	97.8	80.1	97.1	79.6	98.9
LiBr	81.6	95.0	78.2	95.7	78.8	.....
$LiNO_3$	83.6	99.2	79.5	97.7	79.7	100.0
Li_2SO_4	59.7	96.7	58.5	96.3	56.3	98.7
NaCl	85.8	98.9	84.6	99.1	80.7	97.5
NaBr	85.9	.....	82.8	.....	81.1	98.2
NaI	85.7	97.9	84.3	97.7	80.1	100.0
$NaNO_3$	83.9	99.8	77.9	97.8	80.4	100.0
$NaClO_3$	84.3	100.0	82.9	100.0	77.7	100.0
$NaClO_4$	88.4	99.6	84.5	99.7	.....	.....
Na_2SO_4	61.4	93.6	60.1	93.0	58.5	.....
Na_2HPO_4	.....	99.9	.....	99.8	.....	98.5
$NaHNH_4PO_4$	62.6	100.0	.....	100.0	.....	100.0
$Na_4Fe(CN)_6$	49.6	91.9	49.2	91.5	46.9	97.8
$Na_2B_4O_7$	.....	92.7	.....	93.5	.....	.....
$NaCH_3COO$	83.2	100.0	82.7	100.0	80.1	100.0
KCl	88.5	100.0	86.6	100.0	83.3	99.6
KBr	85.8	100.0	84.5	100.0	82.7	98.7
KI	86.4	98.2	82.0	96.3	82.5	100.0
KNO_3	81.2	100.0	79.5	100.0	81.0	99.5
$KClO_3$	81.3	97.5	79.7	97.2	76.8	96.7
$KClO_4$	.....	97.0	.....	97.1	.....	95.7
K_2CO_3	75.3	.....	72.3	.....	62.2	.....
K_2HPO_4	71.7	99.0	69.5	97.3	.....	.....
K_3PO_4	60.2	99.2	59.3	99.0	58.7	98.5
$KNaSO_4$	66.6	97.6	63.7	96.9	58.6	90.0
$K_2Ni(SO_4)_2$	47.0	90.3	45.5	89.7	42.4	88.5
$KMnO_4$	88.8	96.8	87.5	95.5	85.5	95.4
K_2CrO_4	73.5	99.1	70.0	98.7	.....	.....
$K_2Cr_2O_7$	79.8	97.7	79.6	98.0	78.6	.....
$K_4Fe(CN)_6$	51.5	90.0	50.9	91.2	47.1	.....
KCH_3COO	82.0	98.4	81.3	98.3	.....	96.6
KSCN	85.8	99.2	83.0	98.4	80.4	.....
NH_4Cl	88.4	100.0	86.1	100.0	81.8	100.0
NH_4Br	90.0	100.0	87.7	100.0	82.5	100.0
$N(C_2H_5)_4I$	69.6	96.2	71.6	97.6	.....	.....
HN_4NO_3	84.2	97.8	82.2	97.5	81.2	99.1
$(NH_4)_2SO_4$	65.0	95.4	63.9	95.2	.....	.....
NH_4HSO_4	60.3	97.0	51.9	97.4	35.5	93.0

Dissociations of the Various Salts—Continued.

	0°		25°		65°	
	$v=8$	$v=1024$	$v=8$	$v=1024$	$v=8$	$v=1024$
$CaCl_2$	72.5	96.2	69.9	95.7	67.1	.....
$CaBr_2$	77.1	99.6	74.1	98.7	69.6	97.9
$Ca(NO_3)_2$	65.8	96.7	64.8	96.8	62.8	.....
$CaCrO_4$	49.7	96.1	49.0	96.6	44.8	95.7
$Ca(HCOO)_2$	66.3	.....	65.3	.....	64.4	.....
$SrCl_2$	69.5	96.4	69.8	97.6	69.1	97.9
$SrBr_2$	77.5	100.0	75.4	100.0	68.6	.....
$Sr(NO_3)_2$	64.2	96.7	64.6	97.9	62.5	.....
$Sr(CH_3COO)_2$	57.7	93.1	58.0	96.4	54.7	.....
$BaCl_2$	74.6	98.6	72.4	98.5	.....	.....
$BaBr_2$	77.1	99.7	74.2	98.9	73.9	97.4
$Ba(NO_3)_2$	58.1	97.0	61.1	97.7	58.1	.....
$Ba(HCOO)_2$	64.6	92.1	63.5	87.7	63.6	100.0
$Ba(CH_3COO)_2$	63.0	96.5	60.8	96.9	.....	.....
$MgCl_2$	70.9	95.8	69.1	95.8	65.3	.....
$MgBr_2$	71.6	93.9	69.7	94.3	68.8	.....
$Mg(NO_3)_2$	72.1	97.9	70.0	99.7	.....	.....
$MgSO_4$	41.1	92.4	39.8	92.3	36.8	93.6
$Mg(HCOO)_2$	59.8	96.7	59.2	95.4	57.2	.....
$Mg(CH_3COO)_2$	56.6	94.6	54.3	96.1	52.3	.....
$Zn(NO_3)_2$	70.4	94.1	68.6	94.5	65.0	96.2
$ZnSO_4$	36.9	89.5	36.7	90.7	28.7	.....
$Zn(CH_3COO)_2$	45.0	95.3	40.8	95.9	31.4	93.2
$CdCl_2$	37.4	93.9	34.2	91.6	31.7	.....
$CdBr_2$	30.5	89.4	30.3	89.8	29.5	.....
CdI_2	20.5	81.0	21.5	83.9	22.8	.....
$MnCl_2$	74.0	100.0	72.3	100.0	62.7	100.0
$Mn(NO_3)_2$	78.8	100.0	73.7	100.0	.....	.....
$MnSO_4$	35.4	86.1	33.5	85.2	.....	.....
$NiCl_2$	74.2	100.0	72.0	100.0	66.2	.....
$NiNO_3$	75.4	100.0	73.7	100.0	73.0	100.0
$NiSO_4$	37.5	92.7	36.9	92.9	.....	.....
$NiCH_3COO$	47.4	95.6	45.1	95.8	39.8	96.8
$CoCl_2$	75.1	100.0	73.0	100.0	65.3	100.0
$CoBr_2$	75.7	96.3	72.3	97.8	68.0	.....
$Co(NO_3)_2$	75.0	100.0	73.3	100.0	66.4	.....
$CoSO_4$	37.9	91.9	36.6	92.0	.....	.....
$Co(CH_3COO)_2$	50.0	95.4	47.9	94.9	.....	.....
$AgNO_3$	78.8	.....	76.9	.....	79.5	99.3
$CuCl_2$	71.2	100.0	68.2	100.0	.....	.....
$CuBr_2$	69.5	95.4	69.9	97.5	.....	.....
$Cu(NO_3)_2$	72.2	100.0	70.3	100.0	.....	.....
$CuSO_4$	35.5	88.8	33.4	87.6	.....	.....
$PbCl_2$	.....	94.6	.....	94.0	.....	92.6
$Pb(NO_3)_2$	52.6	98.9	55.3	100.0	54.4	97.2
$Pb(CH_3COO)_2$	18.2	84.9	18.8	84.0	18.4	81.0
$AlCl_3$	60.4	92.8	55.4	90.4	44.0	83.6
$Al(NO_3)_3$	61.6	92.3	55.6	89.3	43.4	82.6
$Al_2(SO_4)_3$	24.9	73.2	22.3	69.9	15.2	60.6
$CrCl_3$	45.5	87.2	39.4	86.3	48.9	85.5
$Cr(NO_3)_3$	55.9	96.5	48.9	94.3	41.7	89.5
$Cr_2(SO_4)_3$	24.7	76.2	21.7	76.8	12.4	64.6
UO_2Cl_2	63.1	92.0	59.2	89.6	.....	.....
$UO_2(NO_3)_2$	61.0	90.0	54.9	88.0	46.5	86.1
UO_2SO_4	38.4	86.4	32.3	79.5	28.4	70.5
$UO_2(CH_3COO)_2$	36.5	83.7	39.0	83.0	.....	.....

An examination of the preceding tables shows the following relations. The halogen salts of lithium are all dissociated to just about the same extent, the sulphate in the more concentrated solutions very much less.

The salts of sodium with the common mineral acids are all dissociated to just about the same extent, and slightly greater than the corresponding salts of lithium. This applies also to the sulphate in the more concentrated solution. Potassium salts of the common mineral acids show just about the same dissociation. The potassium salts of these acids are, in general, slightly more dissociated than the corresponding sodium salts.

The salts of ammonium are even slightly more dissociated than those of potassium. This points strongly to the correctness of the theory that ammonium hydroxide is a strong and not a weak base. Salts of strong bases are more dissociated than those of weak bases. The fact that ammonium hydroxide has small conductivity and is yet a strong base has been satisfactorily explained by Hantzsch. When ammonia is dissolved in water only a little ammonium hydroxide is formed, and this is strongly dissociated. Most of the ammonia in the presence of water remains there as ammonia and does not form the hydroxide with water. This explains the small conductivity of an aqueous solution of ammonia.

That ammonium hydroxide is a strong base is in keeping with the fact that ammonium salts of strong acids are so little hydrolyzed. Only the salts of comparatively weak bases with strong acids are appreciably hydrolyzed.

Salts of calcium, strontium, barium, and magnesium are dissociated to approximately the same extent, but considerably less than the corresponding salts of the alkali metals under the same conditions of dilution and temperature. Salts of zinc are dissociated somewhat less than those of magnesium. This applies especially to the halogen salts, which were not studied in this work because of the ease with which they break down with water.

The halogen salts of cadmium are dissociated less than those of any other known metal except mercury. What this means we do not know. The comparatively small dissociation of the cadmium halides is seen from the above table. The halides of mercury are scarcely dissociated at all, the aqueous solutions of these salts being practically nonelectrolytes, not conducting the current to any appreciable extent. The salts of manganese, nickel, and cobalt have approximately the same dissociation. These substances are dissociated to just about the same extent as the corresponding salts of calcium, strontium, barium, and magnesium. The same applies to the salts of copper. Lead salts show considerably less dissociation.

The salts of aluminium and iron are quaternary electrolytes, each molecule dissociating into four ions. The percentage dissociation, which, on account of hydrolysis can be taken only as an approximation, is much less than that of the salts of calcium, strontium, barium, magnesium, manganese, nickel, and cobalt.

TEMPERATURE COEFFICIENTS OF CONDUCTIVITY AND THE SOLVATE THEORY OF SOLUTION.

The temperature coefficients of conductivity are expressed both in conductivity units and in per cent. Certain relations between the coefficients in conductivity units and the solvate theory of solution have already been pointed out for a few substances.* We can now see how general these relations are. We have seen that the chief factor conditioning the increase in conductivity with rise in temperature is the increase in the velocities with which the ions move. If we assume that the force which drives the ions is constant, the velocity would be conditional chiefly by the viscosity of the medium through which the ion moves, and by the mass and size of the ion. The force that drives the ion would be greater at the more elevated temperatures, and the viscosity of the medium through which the ion moves would be less. Both of these factors would increase the ionic velocities and, consequently, the conductivity with rise in temperature.

There is, however, another factor which must be taken into account. That many ions in aqueous solution are hydrated seems now to be generally accepted. We have shown that these hydrates are relatively unstable; the higher the temperature the less complex the hydrate existing in solution. One example will make this point clear. In a normal solution of aluminium chloride, every molecule of the salt, or the ions resulting from it, is combined with about 30 molecules of water at the freezing point of the solution. Practically all of the water can be removed from such a solution by boiling it, except six molecules to one of aluminium chloride, this being the number brought out of solution as water of crystallization. The smaller the number of molecules of water combined with the ion the less the mass of the ion, and the less its resistance when moving through the solvent. Consequently, the ion will move faster the higher the temperature.

When we refer to the mass of the ion decreasing with rise in temperature, we do not refer to the charged atom or group of atoms which we usually term the ion, but to this charged nucleus *plus* a larger or smaller number of molecules of water which are attached to it, and which it must drag along with it in its motion through the remainder of the solvent.

The above conclusion can be tested by the results of experiment. If this factor of diminishing complexity of the hydrate of the ion with rise in temperature plays any prominent rôle in determining the large temperature coefficient of conductivity, then we should expect to find those ions with the largest hydrating power, having the largest temperature coefficients of conductivity. This condition can be tested by the results, as can be seen from the tables on page 77.

The hydrating power of a salt (or the ions resulting from it) is roughly proportional to the number of molecules of water with which the salt crystallizes. This is the same as to say that the salt which has the greatest power to bring water with it out of solution as water of crystallization would be the salt which, in solution, would combine with the largest amount of water. Water of crystallization is, then, a good general criterion of the degree of hydration in aqueous solution.

*Amer. Chem. Journ., **35**, 445 (1906).

TABLE I.

Substances with slight hydrating power.	Temperature coefficients in conductivity units.			
	25° to 35°		50° to 65°	
	$v=8$	$v=1024$	$v=8$	$v=1024$
Sodium chloride	2.00	2.46	2.27	2.82
Sodium bromide	1.89	.....	2.18	2.79
Sodium iodide	2.12	2.54	2.33	3.14
Sodium nitrate	2.04	2.45	2.02	2.67
Sodium chlorate	1.77	2.22	2.15	2.90
Potassium chloride	2.39	2.84	2.45	3.11
Potassium bromide	2.43	2.91	2.45	3.11
Potassium iodide	2.38	2.91	2.65	3.37
Potassium nitrate	2.08	2.16	2.31	2.83
Potassium chlorate	2.02	2.52	2.23	2.94
Potassium permanganate	2.04	2.31	2.29	2.23
Potassium sulphocyanate	2.20	2.56	2.34	.....
Ammonium chloride	2.42	2.94	2.51	3.69
Ammonium bromide	2.32	2.86	2.58	3.11
Ammonium nitrate	2.17	2.50	2.33	3.04

TABLE II.

Substances with large hydrating power.	Temperature coefficients in conductivity units.			
	25° to 35°		35° to 50°	
	$v=8$	$v=1024$	$v=8$	$v=1024$
Calcium chloride	3.49	4.85	.....	.....
Calcium bromide	3.73	5.00	4.03	6.03
Calcium nitrate	3.09	4.79	3.33	.....
Strontium chloride	3.37	5.13	3.92	6.02
Strontium bromide	3.66	5.27	4.08	.....
Strontium nitrate	2.76	4.86	3.58	.....
Barium chloride	3.63	5.30	3.33	.....
Barium bromide	3.66	5.18	4.00	5.99
Barium nitrate	3.09	4.74	3.34	.....
Magnesium chloride	3.40	4.72	3.61	.....
Magnesium bromide	3.55	4.84	4.08	.....
Magnesium nitrate	3.10	4.78	3.57	.....
Zinc nitrate	3.13	4.47	3.43	5.41
Manganous chloride	3.14	4.86	3.43	6.37
Nickel chloride	3.41	5.04	3.61	.....
Nickel nitrate	3.21	4.58	.....	.....
Cobalt chloride	3.39	4.95	3.54	.....
Cobalt bromide	3.32	4.96	3.75	.....
Cobalt nitrate	3.20	4.67	3.05	.....
Cupric chloride	3.16	5.04	.....	.....
Cupric bromide	3.42	4.93	.....	.....
Cupric nitrate	3.18	4.88	.....	.....
Aluminium chloride	4.57	8.64	5.16	12.49
Aluminium nitrate	4.19	7.86	4.87	11.65

The approximate hydration of a large number of substances has, however, been worked out in this laboratory, and published in monograph No. 60 of the Publications of the Carnegie Institution of Washington. It will be seen that the substances in Table I have little or no water of crystallization, and are therefore only slightly

hydrated in aqueous solution. Those in Table II crystallize with very different amounts of water, but all with fairly large amounts of water. These substances are, therefore, much hydrated in aqueous solution.

It should be noted that the sulphates, single and double phosphates, chromates, bichromates, ferro- and ferricyanides, etc., are omitted from both of the above tables. The relations here under discussion do not apply to these more complex substances.

Let us now compare the temperature coefficients of conductivity, expressed in conductivity units per degree rise in temperature, for some of those substances which have slight hydrating power, with the corresponding coefficients for some of those compounds which have a much greater power to combine with water.

The volumes range from 8 to 1024, and the temperature coefficients are calculated between 25° and 35°, and between 50° and 65°. It will be seen, in general, that the substances in Table I have much smaller coefficients of conductivity at all dilutions and all temperatures than those in Table II. This is true, even when we take into account the fact that the substances in Table I are binary electrolytes—each molecule breaking down into two ions; while those in Table II are nearly all ternary electrolytes, each molecule yielding three ions, while the two salts of aluminium are quaternary electrolytes, each molecule breaking down into four ions.

Another fact of equal importance is brought out by comparing the results in Table I with one another, and similarly those in Table II with one another. If the temperature coefficient of conductivity is a function of the decrease in the complexity of the hydrate formed by the ion, with rise in temperature, then we might expect that *those substances which have equal hydrating power would have approximately the same temperature coefficients of conductivity.*

An examination of the above tables will show this to be true. The substances in Table I all have slight hydrating power, as would be expected from the fact that they all crystallize with little or no water. It will be seen that their temperature coefficients of conductivity are all of the same order of magnitude.

The compounds in Table II have different hydrating power, but all have very great hydrating power. Most of them, however, have hydrating power of the same order of magnitude. Indeed, this would be expected, since most of these substances crystallize with six molecules of water. There are a few substances in this table which crystallize with less than six molecules of water. Thus, barium chloride crystallizes with only two molecules, yet it forms hydrates of comparable complexity* with those substances which crystallize with larger amounts of water. That its temperature coefficients of conductivity are of the same order of magnitude as the other substances in the table is, therefore, entirely in keeping with the above relation. The hydrates formed by barium nitrate have not yet been worked out, so that it is impossible to say whether or not it presents an exception to the above relation, it crystallizing without water.

Manganous chloride crystallizes with only four molecules of water, yet the work of Jones and Bassett† has shown that it forms hydrates about as complex as the

*Carnegie Institution of Washington Publication No. 60.

†Amer. Chem. Journ., 33, 562 (1905); Carnegie Institution of Washington Publication No. 60, pp. 75 and 76.

other salts in Table II. Its temperature coefficients of conductivity are of the same order of magnitude as the other compounds included in this table.

The halogen salts of copper present apparent exceptions to the above relation. The chloride crystallizes with only two molecules of water, and yet has temperature coefficients of conductivity that are nearly as large as the salts with six molecules of water of crystallization. It might be inferred from this that this salt has much less hydrating power than the other compounds in Table II. The work of Jones and Bassett,* however, shows that this is not the case. Copper chloride has almost as great hydrating power as the compounds in this table which crystallize with six molecules of water. When we take this fact into account its temperature coefficients of conductivity are not surprisingly large.

Aluminium chloride crystallizes with six molecules of water, and aluminium nitrate with eight. They are, however, quaternary electrolytes, and their temperature coefficients are therefore larger than those of the ternary electrolytes. The hydrating power of these salts has been worked out† and has been found to be of the same order of magnitude as that of the ternary electrolytes in this table.

A third point brought out by the above tables is the following. *The temperature coefficients of conductivity for any given substance are greater at the higher dilution than at the lower.* This is satisfactorily explained on the basis of the above suggestion. The complexity of the hydrates at the higher dilutions is greater than at the lower, as has been shown by Jones and his co-workers, on the composition of the hydrates formed by different substances at different dilutions.‡

The hydrates being more complex at the higher dilutions, the change in the composition of the hydrates with change in temperature would be greater at the higher dilutions; and, consequently, the temperature coefficients of conductivity would be greater the more dilute the solution.

To summarize the above three points:

(*a*) The temperature coefficients of conductivity of aqueous solutions of salts, expressed in conductivity units, are greater the greater the hydrating power of the salt.

(*b*) The temperature coefficients of conductivity of aqueous solutions of electrolytes are of the same order of magnitude for those substances having approximately the same hydrating power.

(*c*) The temperature coefficients of conductivity for any given salt increase with the dilution of the solution, and this increase is greatest for those substances with large hydrating power.

All three of these conclusions are necessary consequences of the assumption that the large change in conductivity with change in temperature is due, in part, to the decreasing complexity of the hydrates formed around the ions, with rise in temperature. As these conclusions are verified by the experimental results, and as there seems to be no other assumption which would lead to these conclusions, we must accept the assumption which led to them as containing a large element of truth.

*Carnegie Institution of Washington Publication No. 60, pp. 84 and 85; Amer. Chem. Journ., **33**, 577, 1905.

†Carnegie Institution of Washington Publications No. 60, pp. 67 and 88.

‡Carnegie Institution of Washington Publication No. 60.

HYDRATION AND IONIC VOLUME.

While discussing the hydrating powers of different ions, the following relation should be pointed out. Jones and Pearce,* after calling attention to the fact that the hydrating power of any salt is primarily a function of the cation, point out this relation:

If the atomic volumes of the elements are plotted as ordinates against the atomic weights as abscissas, we have the well-known atomic-volume curve. The curve contains well-defined maxima and minima. The alkali metals fall at the maxima of the curve. The three elements with the largest atomic volumes are potassium, rubidium, and cæsium. Salts of these metals usually crystallize from aqueous solution without water of crystallization, and they, therefore, have very little hydrating power. Lithium and sodium, some of whose salts crystallize with two and three molecules of water, and which, therefore, show some hydrating power in solution, have much smaller atomic volumes. At the minimum of the third section of the atomic-volume curve we find the elements strontium, iron, cobalt, copper, and nickel. The salts of these metals crystallize with relatively large amounts of water, and they show great hydrating power in solution. Aluminium, which has less than half the atomic weight of iron, but slightly greater atomic volume, falls at the second minimum of the atomic-volume curve. Its salts crystallize with six and eight molecules of water and show great hydrating power in solution.

Comparing the metals of the calcium group, we find that barium, whose salts crystallize with two molecules of water, has the largest atomic volume. The salts of the other elements of this group crystallize each with six molecules of water, with the exception of calcium nitrate, which crystallizes with four molecules. The magnesium ion, which has the smallest atomic volume of any element of this group, has the greatest hydrating power. Strontium, which has a slightly larger atomic volume than calcium, has a somewhat smaller hydrating power than calcium.

A careful examination of all of the evidence available shows that the *hydrating power of the cation is an inverse function of its atomic volume.*

This explains why it is that ions with large mass often have larger migration velocities than ions with smaller mass, which is the reverse of what would be expected. Thus, potassium, rubidium, and cæsium have larger migration velocities than sodium and lithium, notwithstanding the greater mass and volume of the former. This was for a long time inexplicable. We now have the explanation. Lithium and sodium have smaller atomic volume than potassium, rubidium, and cæsium, and, consequently, greater hydrating power. The hydrated lithium and sodium ions move more slowly, due to the atmosphere of the solvent which they must drag with them through the solution.

A large number of similar relations have been pointed out by Jones and Pearce.†

The question arises, Why this relation between hydrating power and atomic volume? It probably has to do with the electrical density upon the ion. The smaller the ion the greater the electrical density, and, consequently, the greater the power of the ion to condense molecules of the solvent upon it and hold them there in a state of loose combination.

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*Amer. Chem. Journ., **38**, 736 (1907). †Ibid, **38**, 737–740 (1907).

It should be noted, before leaving the discussion of the temperature coefficients expressed in "conductivity units," that these coefficients in general increase with rise in temperature. This increase is only slight in the cases of those substances which are only a little hydrated, as will be seen in Table I. Table II shows a large increase in the coefficients with rise in temperature, and it will be recalled that this table contains those substances that have large hydrating power. This shows that the hydrates became more and more unstable the higher the temperature, there being more decomposition of the hydrates between 50° and 65° than between, say, 20° and 35°. This is what would be expected from the results already obtained in this laboratory* in connection with the effect of temperature on hydrates in aqueous solution.

Certain of the temperature coefficients from 35° to 50° are not given. This is due to the fact that one set of solutions was used from 0° to 35°, and an entirely different set from 35° to 65°. The solutions of these substances are more or less hydrolyzed, and probably have an hydrolysis time factor. Since the two sets of solutions of the substances in question stood for different lengths of time before using, this factor would make its influence felt.

The agreements, in general, between the two sets of results for the two sets of solutions at 35° were very good. In those cases where the deviations were more than a fraction of 1 per cent, the work, as has already been stated, was repeated.

TEMPERATURE COEFFICIENTS OF CONDUCTIVITY IN PER CENT.

The temperature coefficients of conductivity are also expressed in "per cent." These are the temperature coefficients in conductivity units divided by the conductivity at the lower temperature. The relations between the coefficients expressed in per cent can best be seen from the table on pages 82 and 83, which contains practically all of the salts studied in this investigation. The coefficients are given for two dilutions $V=8$ and $V=1024$, and over two ranges in temperature 25° to 35° and 50° to 65°. This will enable us to see the effect of dilution and of temperature on these coefficients.

The most striking feature of the table is the following: Take any one column, which gives the results for the different substances at the same dilution and temperature. It will be seen that for nearly all of these different types of salts, and the number is large, the temperature coefficients of conductivity in per cent is approximately the same; and not very widely removed from two, for $V=8$; and the range of temperature from 25° to 35°. There are some exceptions to this conclusion.

There are two lithium salts, the nitrate and sulphate, which are, the one much less, and the other much greater than two. Then there are exceptions among the complex salts. Potassium sodium sulphate, potassium chromium sulphate, potassium aluminium sulphate, and potassium ferrocyanide have values considerably less than two. Ammonium acid sulphate is a marked exception, the significance of which we shall try to work out in the future. Similarly, the green variety of ammonium chromium sulphate has a coefficient of only 1.38.

*Carnegie Institution of Washington Publication No. 60, 156 (1907).

The salts of calcium, strontium, barium, and magnesium have, in general, coefficients which do not differ widely from 2; although strontium nitrate has a value of only 1.79. It might be mentioned that strontium nitrate crystallizes without water. Zinc acetate also has a small coefficient, 1.59. This may be due to hydrolysis. Cadmium iodide, which crystallizes without water, has the large coefficient 2.27. Manganous sulphate has the rather small value 1.79, and copper sulphate has the same value. Aluminium sulphate has the very low value 1.57, chromium sulphate 1.61, and uranyl sulphate only 1.29.

Notwithstanding these apparent exceptions, there is unmistakably this general relation, that the temperature coefficients for $V=8$ and over this temperature range, for a large number of very widely different compounds, are very nearly the same and not widely removed from 2.

If we examine the other columns of data corresponding to other dilutions and other temperatures, we find relations similar to the above. Thus, for $V=1024$, and the temperature range 25° to 35°, the average value of the coefficient is a round 2.1. The average value of the coefficients for $V=8$, between 50° and 65°, is from 1.4 to 1.5, while the average value for $V=1024$, between 50° and 65°, is slightly greater.

We thus see that change in volume, range of temperature being constant, has very little effect on the temperature coefficients of conductivity expressed in per cent.

The effect of rise in temperature is to decrease the magnitude of these coefficients.

Temperature Coefficients in Per Cent.

Substances.	25° to 35°		50° to 65°	
	$v=8$	$v=1024$	$v=8$	$v=1024$
Lithium chloride	2.13	2.15	1.51	1.62
Lithium bromide	2.19	2.13	1.49	.....
Lithium nitrate	1.67	1.98	1.94	2.50
Lithium sulphate	2.65	2.24	3.00	1.77
Sodium chloride	2.03	2.13	1.51	1.54
Sodium bromide	1.88	.....	1.44	1.54
Sodium iodide	2.11	2.18	1.52	1.67
Sodium nitrate	2.24	2.15	1.43	1.54
Sodium chloride	2.05	2.13	1.62	1.78
Sodium perchlorate	2.00	2.12	.....	.....
Sodium sulphate	2.17	2.19	1.58	.....
Sodium carbonate	2.23	2.37	1.59	1.70
Sodium ferrocyanide	2.09	2.05	1.42	1.68
Sodium acetate	2.23	2.46	1.61	.....
Potassium chloride	2.01	2.07	1.37	1.47
Potassium bromide	2.00	2.03	1.35	1.46
Potassium iodide	1.97	2.05	1.46	1.35
Potassium nitrate	1.87	1.53	1.40	1.40
Potassium chlorate	1.93	1.97	1.40	1.49
Potassium sulphate	2.00	2.25	1.35	1.48
Potassium phosphate	2.13	2.14	1.61	1.56
Potassium sodium sulphate	1.79	2.08	1.44	1.51
Potassium nickel sulphate	1.96	2.06	1.25	1.48
Potassium chromium sulphate	1.78	2.01	1.33	2.27
Potassium permanganate	1.96	2.03	1.44	1.22
Potassium chromate	2.01	1.96	1.35	.....
Potassium bichromate	1.97	1.97	1.37	.....
Potassium ferrocyanide	1.62	2.08	1.36	.....
Potassium aluminium sulphate	1.78	2.11	1.06	.....
Potassium acetate	1.97	2.09	.....	1.56
Potassium sulphocyanate	1.98	1.95	1.40	.....
Ammonium chloride	2.02	2.13	1.40	1.72
Ammonium bromide	1.88	2.03	1.42	1.41
Ammonium nitrate	1.91	1.86	1.38	1.49

TEMPERATURE COEFFICIENTS IN PER CENT—Continued.

Substances.	25° to 35°		50° to 65°	
	$v=8$	$v=1024$	$v=8$	$v=1024$
Ammonium sulphate	1.87	2.05	1.34	.....
Ammonium acid sulphate	0.74	1.31	0.40	1.52
Ammonium aluminium sulphate	1.80	2.12	1.08	.....
Ammonium chromium sulphate (violet)	1.85	2.25	1.30	1.66
Ammonium chromium sulphate (green)	1.38	2.20	0.81	1.32
Ammonium copper sulphate	1.88	2.03	1.23	1.46
Calcium chloride	2.02	2.05	1.55	.....
Calcium bromide	2.10	2.11	1.44	1.56
Calcium nitrate	1.96	2.04	1.39	.....
Calcium chromate	1.85	2.13	1.26	1.38
Calcium formate	2.02	.....	1.43	.....
Strontium chloride	1.94	2.11	1.48	1.62
Strontium bromide	2.03	2.20	1.44	1.50
Strontium nitrate	1.79	2.08	1.53	.....
Strontium acetate	2.15	2.30	1.73	.....
Barium chloride	2.17	2.28	1.22	.....
Barium bromide	1.95	2.07	1.42	1.54
Barium nitrate	2.11	2.02	1.48	.....
Barium formate	1.93	2.29	1.47	1.54
Barium acetate	2.00	.....	2.18	.....
Magnesium chloride	2.09	2.09	1.45	.....
Magnesium bromide	2.08	2.10	1.46	.....
Magnesium nitrate	1.93	2.12	1.46	.....
Magnesium sulphate	1.95	2.15	1.24	1.63
Magnesium formate	2.10	1.91	1.46	.....
Magnesium acetate	2.24	2.69	1.56	.....
Zinc nitrate	1.99	2.06	1.44	1.56
Zinc sulphate	1.95	.....	1.10	.....
Zinc acetate	1.59	2.23	0.75	1.41
Cadmium chloride	1.93	2.17	1.27	.....
Cadmium bromide	2.03	2.12	1.34	1.62
Cadmium iodide	2.27	2.25	1.50	.....
Manganous chloride	2.00	2.24	1.41	1.71
Manganous nitrate	1.95	2.13	.....	.....
Manganous sulphate	1.79	2.11	1.04	.....
Nickel chloride	2.07	2.18	1.46	1.58
Nickel nitrate	2.03	.....	2.14	.....
Nickel sulphate	1.80	2.11	1.17	.....
Nickel acetate	2.04	2.29	1.29	1.64
Cobalt chloride	2.10	2.24	1.42	.....
Cobalt bromide	1.94	2.14	1.44	.....
Cobalt nitrate	2.03	2.17	1.44	.....
Cobalt sulphate	1.88	2.15	1.15	.....
Cobalt acetate	1.99	2.22	1.52	.....
Silver nitrate	2.06	.....	1.51	.....
Copper chloride	2.00	.....	2.17	.....
Copper bromide	2.02	.....	2.08	.....
Copper nitrate	2.03	.....	2.19	.....
Copper sulphate	1.79	.....	0.93	.....
Lead chloride	.....	2.07	.....	1.54
Lead nitrate	2.12	.....	1.51	.....
Lead acetate	2.12	2.02	1.37	1.28
Aluminium chloride	2.07	2.40	1.51	2.05
Aluminium nitrate	2.03	2.36	1.52	2.01
Aluminium sulphate	1.57	2.07	0.76	1.38
Ferric chloride	1.99	2.64	.....	.....
Ferric nitrate	2.32	2.72	.....	.....
Chromium chloride	3.23	2.50	1.56	1.99
Chromium nitrate	1.99	2.40	1.59	1.95
Chromium sulphate	1.61	2.22	0.60	1.67
Uranyl chloride	1.97	2.31	1.44	.....
Uranyl nitrate	2.03	2.37	1.50	1.80
Uranyl sulphate	1.29	.....	1.55	.....
Uranyl acetate	2.05	.....	1.73	.....

PART II.—ORGANIC ACIDS.

The Experimental Work in Part II was Carried Out by
Doctors Clover, Jacobson, Kreider, Smith,
Springer, White, and Wightman.

ORGANIC ACIDS.

The acids used were all obtained from Kahlbaum. Each acid was purified by the method best adapted to that particular acid, and its purity tested.

The method of work was, in general, the same as that followed with the inorganic salts. The cell constants were determined as in the work with salts. The following table of data will show how well the constants as calculated from three different readings with three different resistances agreed with one another, the table being taken from the work of Wightman; W being the resistance in the rheostat, b the distance on the wire from the point of contact to one end of the wire, and K the cell constants.

CELL CONSTANTS.

Cell	Solution	W	b	K	Mean	Cell	Solution	W	b	K	Mean
VIII	0.02 N	100	559.0	328.82	328.82	I	0.002 N	40	505.6	11.240	11.243
		140	475.2	328.84				46	470.5	11.241	
		150	458.0	328.80				48	460.0	11.245	
VII	0.02 N	80	471.3	184.99	184.97	A	0.0005 N	40	451.0	2.381	2.381
		84	459.1	184.94				42	439.0	2.381	
		88	447.6	184.97				44	427.5	2.381	
VI	0.02 N	60	458.0	131.52	131.52	V	0.002 N	250	555.7	138.68	
		63	445.9	131.52				260	546.0	138.67	
		66	434.5	131.54				270	536.5	138.75	
V	0.02 N	40	454.3	86.38	86.38	IV	0.002 N	250	511.2	138.66	138.66
		42	442.2	88.37				260	501.5	138.60	
		44	430.8	86.40				270	492.0	138.64	
IV	0.02 N	30	481.6	72.30	72.30	II	0.0005 N	340	473.4	143.49	
		32	465.5	72.30				350	466.0	143.64	
		34	450.4	72.24				370	452.3	143.46	
III	0.002 N	200	445.0	44.10	44.10	I	0.0005 N	160	495.0	143.39	143.44
		210	433.0	44.10				170	479.9	143.41	
		220	421.6	44.10				180	465.6	143.39	
II	0.002 N	100	443.7	21.94	21.94						
		110	420.5	21.95							
		120	469.9	21.94							

The first eight cells were used with the various dilutions of the acid. Cell A is the cell with cylindrical electrodes with very small constant, and was employed to determine the conductivity of the water.

Cells V, IV, II, and I were used to determine the molecular conductivity of a 0.002 normal and a 0.0005 normal solution of potassium chloride at 25°, these solutions being used to standardize the cells with small constants. The data show how concordant were the results obtained.

DISSOCIATION OF ORGANIC ACIDS.

The dissociation of most of the organic acids cannot be determined directly by simply increasing the dilution of the solution until complete dissociation is reached. The dilution at which μ_∞ would be reached for these weakly dissociated compounds would be so great that the conductivity method could not be applied to them. It is well known that we have an indirect method of determining the dissociation of

solutions of such weakly dissociated substances. This method is based upon Kahlrausch's law of the independent migration velocities of the ions. If we knew the value of μ_∞ for the sodium salt of the acid it is only necessary to subtract from this the constant for sodium and add the constant for hydrogen to obtain the value of μ_∞ for the acid in question. Thus:

$$\mu_\infty \text{acid} = \mu_\infty \text{HCl} + \mu_\infty \text{Na. salt of acid} - \mu_\infty \text{NaCl.} \quad (1)$$

The μ_∞ for hydrochloric acid, as calculated from the equation, $\mu_\infty = 245.4 + 6.06t - 0.00776t^2$, for the increase in conductivity with temperature (t = temperature), is 331.1 at 14.82°, while the value obtained by direct measurement is 331.0. The value of μ for sodium chloride at 12.13° calculated from the equation

$$\mu_\infty = 63.04 + 204t - 0.00823t^2$$

is 88.99, while the value found is 88.98.

From equation (1) we see that it is also necessary to know the value of μ_∞ for the sodium salt of the acid in question. This has been determined directly for a number of the acids.

Values of μ_∞ for the Sodium Salts of the Organic Acids.—Ostwald obtained μ_∞ for the sodium salts of the organic acids, by calculating the difference between the conductivity of sodium chloride at a certain dilution, *e. g.*, $V = 32$, and at infinite dilution. This difference he assumed to be constant for all sodium salts, and, therefore, by adding it to the conductivity of the sodium salt of any acid at the dilution $V = 32$, μ_∞ for that acid could be obtained. Instead of using this method in this investigation, μ_∞ for the sodium salts was determined directly from conductivity measurements.

The sodium salts were prepared as follows: A dilute solution of the acid (usually about $n/128$) was titrated with a standard solution of sodium hydroxide, using a drop of phenolphthaline as indicator. Alizarine is also a good indicator, and was used in later work because it is less sensitive to carbonic acid.

In a few cases the purified sodium salts were weighed out and made up to the desired concentrations. The sodium hydroxide used for titrating the organic acids was prepared as follows:

One hundred grams of sodium hydroxide, purified from alcohol, was dissolved in 100 grams of conductivity water (obtained as above described) and the concentrated solution was allowed to stand in a closed vessel for about a week. By that time practically all the carbonate, etc., was precipitated, and there was left a perfectly clear solution of sodium hydroxide, portions of which were pipetted out and diluted to the proper strength with conductivity water. The dilute solution was then standardized by means of the standard sulphuric acid, and otherwise. When thus prepared the solution is very nearly free from carbonate, as is shown by the fact that it does not give a precipitate of barium carbonate with barium hydroxide, and that when titrated with indicators, both those that are sensitive and those that are not sensitive to carbonates, the results are practically the same.

The conductivities of the sodium salts of a large number of the acids used in this work are given in the table on pp. 89 and 90.

CONDUCTIVITIES OF SODIUM SALTS OF CERTAIN ACIDS.

Sodium.	v	$\mu_v 0°$	$\mu_v 15°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$	$K_t =$
Acetate	1024	43.35	.....	84.82	104.9			
	2048	44.56	.....	87.69	107.9	130.4	164.5	$44.56+1.520t+0.00822t^2$
	4096	44.60	.....	87.64	106.8			
Trichloracetate	1024	41.96	64.75	82.45	101.98	.....	.....	$41.96+1.38t+0.00952t^2$
Cyanacetate	2048	44.65	65.43	86.80	106.0	135.6	171.9	$44.65+1.52t+0.00668t^2$
Phenylacetate	2048	.....	.....	.....	97.0	121.1	157.0	
Propionate	1024	39.82	.....	78.60	96.86			
	2048	40.57	.....	81.00	100.6	132.0	165.8	$40.57+1.378t+0.00959t^2$
	4096	40.58	.....	81.03	100.8			
α-Brompropionate	1024	42.10	65.04	84.26	105.4			
	2048	44.94	69.83	89.61	108.2	151.8	(a)	$44.94+1.74t+0.002t^2$
	4096	46.63	70.38	90.40	111.2			
β-Iodopropionate	2048	41.54	63.70	81.16	102.8	(a)	(a)	$41.54+1.18t+0.0168t^2$
Levulinate	2048	38.47	59.11	75.13	92.94	121.0	151.0	$38.47+1.242t+0.00898t^2$
Butyrate	1024	39.33	.....	77.69	96.39			
	2048	40.51	.....	80.95	100.2	128.3	161.1	$40.51+1.401t+0.00868t^2$
	4096	40.54	.....	80.86	100.1			
β-Brombutyrate	1024	41.50	64.16	81.90	101.0			
	2048	42.46	65.07	82.53	102.6	(a)	(a)	$42.46+1.32t+0.0115t^2$
	4096	43.34	66.33	84.32	103.4			
Isobutyrate	2048	.....	.....	80.95	100.2	92.29	89.46	
Hydroxyisobutyrate	2048	40.44	62.36	79.42	97.74	126.2	158.3	$40.44+1.36t+0.00779t^2$
Isovalerate	2048	39.64	60.62	77.5	95.5	123.0	153.8	$34.64+1.357t+0.00708t^2$
Caprylate	2048	42.67	61.85	77.61	95.77	119.4	159.9	$42.67+1.099t+0.0120t^2$
Benzilate	1024	25.1	.....	69.5	86.2			
	2048	36.3	.....	71.5	88.9	113.6	140.7	$36.3+1.17t+0.0095t^2$
	4096	35.8	.....	70.8	88.1			
Hippurate	1024	35.65	.....	70.77	86.74			
	2048	36.23	.....	71.54	87.98	112.43	120.6	$36.23+1.250t+0.00651t^2$
	4096	36.31	.....	71.60	88.20			
Pyromucate	2048	40.89	.....	81.84	100.5	126.1	160.7	$40.89+1.478t+0.00639t^2$
Crotonate	2048	39.53	.....	79.00	97.03	130.1	164.8	$39.53+1.416t+0.00639t^2$
Phenylpropionate	2048	39.86	61.41	78.81	95.63	125.1	160.3	
Benzoate (solution of dry salt)	2048	38.93	.....	77.69	96.04	.....	.....	$38.93+1.348t+0.00811t^2$
Benzoate (by titration)	2048	38.91	.....	77.73	96.25			
o-Chlorbenzoate	2048	38.03	58.97	75.47	93.18	123.0	153.5	$38.03+1.30t+0.0078t^2$
o-Nitrobenzoate	2048	.....	.....	.....	.....	123.8	155.5	
m-Nitrobenzoate	2048	.....	.....	.....	.....	124.4	156.3	
p-Nitrobenzoate	1024	38.85	.....	75.71	93.30			
	2048	39.78	.....	76.48	95.80	123.0	153.8	$39.78+1.14t+0.0133t^2$
	4096	38.91	.....	75.86	94.00			
1, 2, 4-Dinitro-benzoate	2048	37.80	58.25	74.77	92.90b	121.1	151.8	$37.80+1.24t+0.0095t^2$
	.....	.....	.....	.....	.....	92.83c		
1, 3, 5-Dinitro-benzoate (by titration)	2048	37.83	58.30	74.60	92.93	121.7	152.6	$37.83+1.24t+0.0095t^2$
1, 3, 5-Dinitro-benzoate (from dry salt)	1024	36.74	56.53	71.81	87.70			
	2048	37.46	57.56	73.13	86.64			
	4096	37.98	58.10	74.60	91.70			
Picrate	2048	.....	.....	.....	.....	106.6	127.6	
Salicylate	1024	40.02	.....	78.09	96.21			
	2048	40.55	.....	79.97	98.90	127.6	160.3	$40.51+1.353t+0.00902t^2$
	4096	40.56	.....	80.00	98.90			
Acetylsalicylate	2048	38.41	59.90	76.42	93.90	.....	122.5	
m-Hydroxybenzoate	2048	.....	.....	79.97	98.90	128.2	159.8	
p-Hydroxybenzoate	2048	.....	.....	79.97	98.90	127.4	158.9	
1, 2, 4-Dihydroxy-benzoate	2048	39.64	60.72	77.49	95.11	122.6	153.4	$39.64+1.337t+0.00708t^2$
1, 2, 5-Dihydroxy-benzoate	2048	39.36	60.58	77.52	95.62	(a)	(a)	$39.36+1.324t+0.0081t^2$
Gallate	2048	37.91	.....	74.38	91.80	114.10	135.15	$37.91+1.259t+0.00799t^2$
o-Aminobenzoate	2048	38.20	.....	75.26	92.51	.....	.....	$38.20+1.308t+0.00696t^2$

a Acid decomposed. b By titration. c From dry salt.

CONDUCTIVITIES OF SODIUM SALTS OF CERTAIN ACIDS—Continued.

Sodium.	v	$\mu_v 0°$	$\mu_v 15°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$	$Kt=$
m-Aminobenzoate	2048	28.63	.....	69.36	89.49	.....	.....	$38.20+1.308t+0.00696t^2$
p-Aminobenzoate	2048	38.20	.....	75.26	92.51			
Metanilate	2048	.....	.....	77.69	95.60	125.0	160.2	
Sulphanilate	1024	38.47	.....	76.20	93.81			
	2048	39.52	.....	77.69	96.05	125.0	160.2	$39.52+1.307t+0.00879t^2$
	4096	39.36	.....	77.70	95.85			
p-Sulphamido-benzoate	2048	39.30	60.23	76.57	94.00	123.3	154.4	$39.30+1.31t+0.0072t^2$
o-Toluate	1024	37.82	.....	74.04	91.87			
	2048	38.26	.....	70.48	92.68	125.09	156.8	
	4096	38.18	.....	74.92	92.58			
m-Toluate	1024	38.02	.....	74.33	92.16			
	2048	38.25	.....	75.63	92.88	125.05	162.7	
	4096	38.28	.....	75.59	92.79			
p-Toluate	1024	38.02	.....	74.90	91.93			
	2048	38.25	.....	75.44	92.40	124.12	159.65	
	4096	38.28	.....	75.28	92.29			
Cinnamate	1024	27.15	.....	72.86	89.91			
	2048	37.69	.....	74.49	92.06	125.1	158.7	$37.69+1.271t+0.00811t^2$
	4096	37.60	.....	74.41	91.95			
Hydrocinnamate	2048	38.49	59.95	76.54	93.21	122.50	155.83	
Anisate	2048	39.36	60.12	76.96	95.04	125.06	158.68	
Vanillate	2048	38.98	60.08	76.64	93.26			
Naphthionate	2048	39.54	57.28	79.05	97.10	123.00	156.02	
Mandelate	2048	38.25	.....	76.00	93.20	130.74	160.78	
Coumarate	2048	38.50	59.97	76.56	93.81	123.00	168.37	

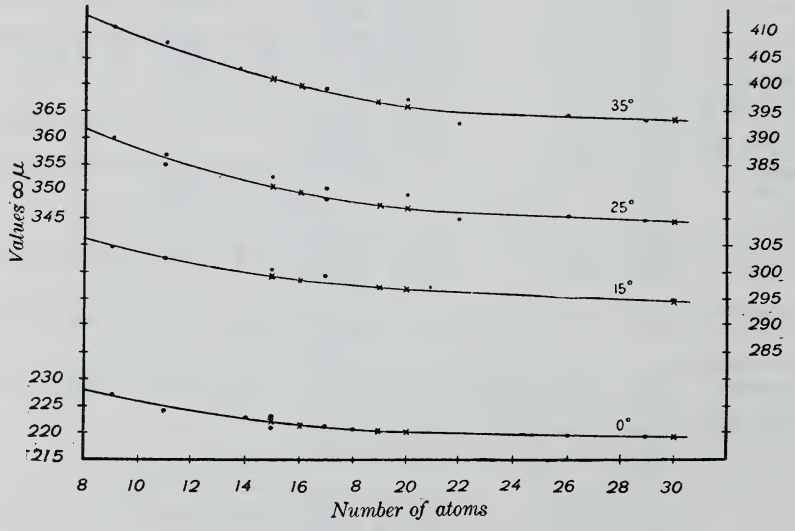

FIG. 5.

The μ_∞ for a number of the acids used in this work could not be determined as above described. These acids are di- or polybasic, and their sodium salts do not give a μ_∞ value even at a dilution of $n/4096$.

The method first used in this laboratory by Wightman for determining the μ_∞ for such acids is as follows: A curve was plotted in which the ordinates are the values of μ_∞ for a number of organic acids, and the abscissas are the number of

atoms in the molecules of the acids. These curves were drawn for the various temperatures used in the work.

By placing the dibasic acid in question in its proper position on one of these curves (the position being determined by the number of atoms in its molecule) the μ_∞ value for the acid can be read off at once.

To show how this method works the preceding figure (fig. 5) is given. The dots represent the positions of a number of acids on the curves, the asterisks the positions of a number of dibasic acids, whose μ_∞ values were found by this method.

VALUES OF μ_∞ FOR THE ORGANIC ACIDS.

Acid.	$\mu_\infty 0°$	$\mu_\infty 15°$	$\mu_\infty 25°$	$\mu_\infty 35°$	$\mu_\infty 50°$	$\mu_\infty 65°$
Acetic	227	292 (12°)	361.0	412.0	.....	.....
Dichloracetic	221.7	305.6	359.3	408.7	477.3	545.8
Trichloracetic	224.8	303.9	355.9	406.4	478.5	520.9
Cyanacetic	227.0	304.5	360.0	410.0	480.6	551.1
Phenylacetic	221.0	290.0 (13.2°)	349.0	400.0	466.0	535.2
Propionic	223.0	260.0 (6.9°)	354.0	405.0	477.0	545.0
α-Brompropionic	229.0	308.9	363.6	415.2	.....	.....
β-Iodopropionic	223.9	302.8	354.4	406.8	.....	.....
n-Butyric	223.0	273 (9.4°)	354.0	404.0	473.3	540.3
α-Brombutyric	224.9	304.1	357.5	407.4	.....	.....
Isobutyric	223.0	310 (16.46°)	353.8	403.0	437.3	468.7
Hydroxyisobutyric	222.8	301.4	352.6	401.7	471.2	537.5
Isovaleric	222.0	299.7	350.0	399.5	468.0	533.0
Caprylic	225.1	300.9	350.8	399.8	464.4	539.1
Malonic	223.0	250.0 (4.9°)	355.0	405.0	477.0	546.0
Dimethylmalonic	222.2	300.4	352.0	400.0	470.0	539.0
Ethylmalonic	222.2	300.4	352.0	400.0	470.0	539.0
Diethylmalonic	219.4	296.1	346.2	393.9	464.8	533.9
Methylethylmalonic	221.0	299.0	349.8	397.3	464.0	533.0
Isopropylmalonic	221.0	299.0	349.8	397.3	464.0	533.0
Dipropylmalonic	218.6	295.1	345.7	392.8	458.0	520.0
Butylmalonic	219.4	296.1	346.2	393.9	464.8	533.9
Benzylmalonic	219.0	295.6	345.7	393.2	464.0	533.0
Allylmalonic	221.4	299.3	350.9	400.0	468.0	537.0
Succinic	223.0	249.8 (5.7°)	355.0	405.8	472.1	539.1
Monobromsuccinic	222.2	302.1	354.1	.....	.....	.....
Dibromsuccinic	.....	.....	.....	.....	.....	.....
Pyrotartaric	221.0	290.0 (12°)	349.0	397.0	468.0	533.0
L-Tartaric	221.0	298.8	350.0	399.9	469.3	534.9
Racemic	222.0	286.0 (12°)	350.0	398.0	468.2	534.9
Thiodiglycolic	221.6	300.2	351.1	401.0	470.8	537.5
Tricarballylic	219.9	296.7	347.6	396.8	468.0	535.0
Cyanuric	.....	.....	.....	405.0	.....	.....
(Benzilic) or diphenylglycolic	218.7	280.5 (12°)	344.7	392.9	458.6	519.9
Hippuric	219.0	280.0 (12°)	345.0	392.0	446.4	499.8
Uric	221.0	298.8	350.0	399.9	.....	.....
Citric	219.0	311 (18.1°)	345.0	392.0	464.5	528.5
Pyromucic	223.0	286 (12°)	355.0	405.0	471.0	539.2
Crotonic	222.0	286 (12°)	352.0	402.0	475.1	544.0
Maleic	223.0	289 (12°)	353.0	402.0	475.0	544.0
Fumaric	223.0	289 (12°)	353.0	402.0	475.0	544.0
Itaconic	221.3	284.6 (12°)	351.0	400.0	471.0	537.5
Citraconic	221.3	284.6 (12°)	351.0	400.0	471.0	537.5
Mesaconic	221.3	284.6 (12°)	351.0	400.0	471.0	537.5
Phenylpropiolic	222.2	300.4	352.0	400.0	470.0	539.0
Benzoic	222.0	304.0 (15.8°)	351.0	400.0	471.0	537.5
o-Chlorbenzoic	220.4	301.8	348.7	397.2	468.0	532.7
o-Nitrobenzoic	222.2	284.6 (12°)	349.7	399.8	468.8	534.7
m-Nitrobenzoic	222.2	284.6	349.7	399.8	469.4	535.2
p-Nitrobenzoic	222.2	284.6	347.9	399.8	468.0	533.2
1, 2, 4-Dinitrobenzoic	220.0	297.3	347.9	396.8	466.1	531.0
1, 3, 5-Dinitrobenzoic	220.2	297.4	347.4	396.9	466.7	531.8

VALUES OF μ_∞ FOR THE ORGANIC ACIDS—Continued.

Acid.	$\mu_\infty 0°$	$\mu_\infty 15°$	$\mu_\infty 25°$	$\mu_\infty 35°$	$\mu_\infty 50°$	$\mu_\infty 65°$
Picric	.....	.....	.....	.....	451.6	506.8
Salicylic	237.0	260.0 (6.9°)	353.0	403.0	472.5	539.0
Acetylsalicylic	220.8	297.4	344.0	397.9	463.5	.....
Sulphosalicylic	.....	.....	.....	.....	.....	.....
m-Hydroxybenzoic	223.0	260.0 (6.9°)	353.0	403.0	472.5	539.0
p-Hydroxybenzoic	223.0	260.0 (6.9°)	353.0	403.0	472.5	539.0
1, 2, 4-Dihydroxybenzoic	222.0	299.8	350.7	399.1	467.6	532.6
1, 2, 5-Dihydroxybenzoic	221.8	299.6	350.7	399.6	467.6	532.6
Gallic	220.0	254.0 (6.5°)	348.0	396.0	459.1	513.4
o-Aminobenzoic	221.0	260 (7.5°)	349.0	396.0	.....	.....
m-Aminobenzoic	211.0	305.8 (18°)	332.6	393.5	.....	.....
p-Aminobenzoic	221.0	260 (7.5°)	349.0	396.0	.....	.....
Metanilic	222.0	255 (6.3°)	351.0	400.0	470.0	538.8
Sulphanilic	222.0	255 (6.3°)	351.0	400.0	470.0	538.8
Picramic	221.7	299.1	350.2	399.0	470.0	537.2
p-Sulphaminobenzoic	221.7	299.3	349.8	398.0	468.3	533.6
Benzenesulphonic	228.0	309.0	359.0	410.0	475.3	544.3
m-Nitrobenzenesulphuric	204.5	275.5 (16°)	323.5	369.4	432.6	591.0
p-Toluenesulphonic	210.6	269.7 (12°)	332.7	379.3	445.9	503.4
1, 2, 4-Nitrotoluenesulphonic	200.5	276.5	318.4	361.9	487.5	556.3
1, 4, 2-Nitrotoluenesulphonic	228.9	318.5 (16°)	362.3	413.6	487.5	556.3
o-Toluic	221.0	284.0 (12°)	349.0	397.0	470.1	536.0
m-Toluic	221.0	284.0	349.0	397.0	470.1	540.2
p-Toluic	221.0	284.0	349.0	397.0	469.1	535.9
Cinnamic	220.0	248.0 (5.3°)	348.0	399.2	470.0	537.2
Hydrocinnamic	220.8	299.9	349.7	397.2	463.5	532.6
o-Phthalic	221.0	267.0 (8.2°)	349.0	397.0	470.0	538.8
4, 5-Dichlorphthalic	.....	.....	.....	.....	.....	.....
Tetrachlorphthalic	.....	.....	.....	.....	.....	.....
Anisic	221.7	299.1	350.2	399.0	470.0	537.2
Vanillic	221.3	299.1	349.8	397.3	464.0	532.8
Naphthionic	221.9	296.3	352.2	401.1	468.0	534.5
Mandelic	221.0	283.0 (12°)	349.0	397.0	475.4	540.0
Camphoric	218.3	279.8 (12°)	344.5	392.0	458.2	519.0
Coumaric	220.9	298.9	349.8	397.9	468.0	534.4

Acetic Acid (Wt. and C.).

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 9.2°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
2	1.270	1.560	2.089	2.359	2.72	3.02
8	2.656	3.292	4.342	4.948	5.62	6.24
32	5.328	6.612	8.699	9.912	11.19	12.40
128	10.48	13.04	17.11	19.46	22.04	24.48
512	20.45	25.40	33.24	37.75	41.84	46.31
1024	28.03	34.95	45.87	52.09	58.29	65.20
2048	39.05	48.65	63.00	70.89	.....	.....

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 9.2°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
2	0.56	0.56	0.58	0.57	0.57	0.55
8	1.18	1.19	1.20	1.20	1.18	1.14
32	2.37	2.40	2.41	2.41	2.35	2.28
128	4.62	4.71	4.74	4.72	4.63	4.50
512	8.80	9.13	9.21	9.16	8.80	8.51
1024	12.35	12.51	12.71	12.64	12.26	11.99
2048	17.20	17.56	17.45	17.21	.....	.....

Dissociation Constants $\times 10^4$.

v	0°	9.2°	25°	35°	50°	65°
2	0.157	0.159	0.169	0.165	0.163	0.155
8	0.175	0.179	0.183	0.182	0.176	0.164
32	0.179	0.184	0.186	0.185	0.177	0.166
128	0.175	0.182	0.184	0.183	0.175	0.165
512	0.166	0.179	0.182	0.181	0.165	0.154
1024	0.170	0.175	0.181	0.179	0.165	0.159
2048	0.174	0.179	0.180	0.175	0.167	.....

Temperature Coefficients in Conductivity Units.

v	0–9.2°	9.2–25°	25–35°	35–50°	50–65°
2	0.03	0.03	0.03	0.03	0.019
8	0.07	0.07	0.06	0.05	0.041
32	0.14	0.13	0.12	0.08	0.080
128	0.28	0.26	0.24	0.17	0.16
512	0.54	0.50	0.45	0.27	0.30
1024	0.72	0.69	0.62	0.42	0.46
2048	1.04	0.91	0.79	.....	.....

Temperature Coefficients in Per Cent.

v	0–9.2°	9.2–25°	25–35°	35–50°	50–65°
2	2.49	2.15	1.30	1.27	0.72
8	2.61	2.02	1.40	1.01	0.73
32	2.62	2.00	1.39	0.81	0.72
128	2.66	1.98	1.37	0.87	0.74
512	2.63	1.96	1.36	0.72	0.71
1024	2.57	1.95	1.32	0.81	0.79
2048	2.67	1.87	1.25	.....	.....

Dichloracetic Acid (Sp.).

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 15°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
32	166.0	220.3	253.9	286.9	330.8	356.8
128	203.7	272.6	318.0	360.4	418.3	453.3
512	220.5	300.0	352.8	403.8	468.6	528.4
1024	221.7	305.6	359.3	408.7	470.0	535.8
2048	217.0	302.1	358.1	408.5	477.3	545.8

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 15°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
32	74.87	72.09	70.67	70.20	69.32	65.37
128	91.88	89.20	88.51	88.12	87.64	83.05
512	99.46	98.17	98.18	98.80	98.18	96.81
1024	100.00	100.00	100.00	100.00	98.47	98.17
2048	97.88	98.85	99.67	99.95	100.00	100.00

Dissociation Constants $\times 10^4$.

v	0°	15°	25°	35°	50°	65°
2	.....	.....	.....	.....	.....	.....
8	.....	.....	.....	.....	.....	.....
32	.....	.....	.....	.....	.....	.....
128	.....	.....	.....	.....	.....	.....
512	.....	.....	.....	.....	.....	.....
1024	.....	.....	.....	.....	.....	.....
2048	.....	.....	.....	.....	.....	.....

Temperature Coefficients in Conductivity Units.

v	0–15°	15–25°	25–35°	35–50°	50–65°
32	3.62	3.36	3.30	2.93	1.75
128	4.59	4.54	4.24	3.86	2.33
512	5.30	5.28	5.10	4.19	3.99
1024	5.46	5.37	4.94	4.09	4.39
2048	5.67	5.60	5.04	4.59	4.57

Temperature Coefficients in Per Cent.

v	0–15°	15–25°	25–35°	35–50°	50–65°
32	2.18	1.53	1.30	1.02	0.52
128	2.25	1.66	1.33	1.07	0.56
512	2.41	1.76	1.43	1.04	0.87
1024	2.46	1.75	1.37	1.00	0.90
2048	2.61	1.85	1.41	1.12	0.95

Trichloracetic Acid (Wm.)

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 15°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
8	193.02	256.24	298.40	334.67	388.8	426.6
32	208.75	277.67	322.46	363.69	423.7	465.0
128	221.73	297.62	344.90	389.83	455.1	501.8
512	223.65	302.33	353.96	403.45	476.5	519.5
1024	224.77	303.94	355.94	406.44	478.5	520.9
2048	221.52	300.21	349.57	397.46	473.0	513.4

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 15°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
8	85.87	84.31	83.83	82.34	81.25	81.90
32	92.87	91.36	90.59	89.88	88.55	89.27
128	98.65	97.92	96.90	95.91	95.11	96.33
512	99.50	99.47	99.44	99.26	99.58	99.73
1024	100.00	100.00	100.00	100.00	100.00	100.00
2048						

Dissociation Constants $\times 10^4$.

v	0°	15°	25°	35°	50°	65°
8	.....	.....	.....	.....	.....	.....
32	.....	.....	.....	.....	.....	.....
128	.....	.....	.....	.....	.....	.....
512	.....	.....	.....	.....	.....	.....
1024	.....	.....	.....	.....	.....	.....
2048	.....	.....	.....	.....	.....	.....

Temperature Coefficients in Conductivity Units.

v	0–15°	15–25°	25–35°	35–50°	50–65°
8	4.25	4.22	3.63	3.61	2.52
32	4.60	4.48	4.12	4.00	2.75
128	5.06	4.73	4.49	4.34	3.11
512	5.25	5.16	4.95	4.87	2.87
1024	5.28	5.20	5.05	4.80	2.83
2048	5.24	4.94	4.79	5.04	2.69

Temperature Coefficients in Per Cent.

v	0–15°	15–25°	25–35°	35–50°	50–65°
8	2.20	1.65	1.22	1.08	0.65
32	2.20	1.61	1.28	1.10	0.65
128	2.28	1.59	1.30	1.11	0.68
512	2.35	1.70	1.40	1.21	0.60
1024	2.35	1.71	1.42	1.18	0.59
2048	2.37	1.65	1.37	1.27	0.57

Cyanacetic Acid (Wm.)

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 15°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
8	38.27	51.66	59.53	66.15	74.72	80.43
32	68.70	92.26	106.47	118.79	134.00	144.50
128	114.23	154.10	178.86	199.67	227.80	249.00
512	164.90	223.37	259.64	293.00	337.30	368.00
1024	187.49	252.59	291.56	332.00	381.70	426.90
2048	199.90	270.40	314.30	356.60	418.10	472.60

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 15°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
8	16.86	16.97	16.54	16.13	15.55	14.59
32	30.26	30.30	29.58	28.97	27.88	26.22
128	50.31	50.60	49.68	48.70	47.40	45.18
512	72.63	73.36	72.12	71.46	70.18	66.78
1024	82.58	82.96	80.99	80.98	79.42	77.46
2048	88.04	88.80	87.30	86.97	86.99	85.75

Dissociation Constants $\times 10^4$.

v	0°	15°	25°	35°	50°	65°
8	43	42	41	39	36	31
32	41	40	39	37	34	29
128	40	39	38	36	33	29
512	38	37	36	35	32	26
1024	38	36	35	34	30	26
2048	32	31	29	28	27	25

Temperature Coefficients in Conductivity Units.

v	0–15°	15–25°	25–35°	35–50°	50–65°
8	0.893	0.787	0.662	0.57	0.38
32	1.67	1.42	1.23	1.01	0.70
128	2.66	2.48	2.08	1.87	1.41
512	3.90	3.63	3.04	2.95	2.05
1024	4.35	3.97	4.04	3.31	3.01
2048	4.70	4.39	4.23	4.10	3.63

Temperature Coefficients in Per Cent.

v	0–15°	15–25°	25–35°	35–50°	50–65°
8	2.33	1.52	1.11	0.87	0.51
32	2.29	1.54	1.16	0.85	0.52
128	2.33	1.61	1.16	0.93	0.62
512	2.36	1.62	1.17	1.01	0.60
1024	2.32	1.57	1.39	1.00	0.79
2048	2.35	1.62	1.35	1.15	0.87

Phenylacetic Acid (Wt. and Sp.).

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 13.25°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
32	9.00	11.76	14.15	15.90	17.79	19.26
128	17.82	23.39	27.96	31.26	34.75	37.53
512	33.35	43.51	52.39	58.55	65.64	70.98
1024	45.68	59.59	71.63	79.84	88.31	95.18
2048	61.00	79.49	95.50	106.3	120.00	130.00

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 13.25°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
32	4.07	4.06	4.05	4.01	3.86	3.60
128	8.06	8.06	8.01	7.87	7.46	7.01
512	15.09	15.01	14.97	14.75	14.08	13.26
1024	20.67	20.55	20.52	20.11	18.95	17.78
2048	27.60	27.41	27.36	26.77	25.75	24.29

Dissociation Constants $\times 10^4$.

v	0°	13.25°	25°	35°	50°	65°
32	0.540	0.536	0.536	0.522	0.484	0.420
128	0.552	0.553	0.545	0.526	0.470	0.413
512	0.524	0.518	0.515	0.499	0.451	0.396
1024	0.526	0.519	0.518	0.494	0.433	0.375
2048	0.514	0.507	0.504	0.478	0.436	0.381

Temperature Coefficients in Conductivity Units.

v	0–13.25°	13.25–25°	25–35°	35–50°	50–65°
32	0.21	0.20	0.18	0.13	0.098
128	0.41	0.40	0.33	0.23	0.185
512	0.77	0.76	0.62	0.47	0.356
1024	1.05	1.03	0.82	0.57	0.451
2048	1.40	1.36	1.06	0.91	0.666

Temperature Coefficients in Per Cent.

v	0–13.25°	13.25–25°	25–35°	35–50°	50–65°
32	2.32	1.73	1.23	0.81	0.550
128	2.32	1.70	1.18	0.73	0.494
512	2.30	1.72	1.18	0.80	0.542
1024	2.30	1.72	1.15	0.71	0.511
2048	2.29	1.71	1.13	0.86	0.555

Propionic Acid (Wt. and Wm.).

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 6.9°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
2	1.030	1.217	1.700	1.913	2.195	2.444
8	2.291	2.700	3.704	4.207	4.740	5.231
32	4.631	5.450	7.436	8.422	9.59	10.39
128	9.004	10.60	14.57	16.50	18.88	20.29
512	17.47	20.59	28.40	32.14	36.30	39.23
1024	23.82	28.03	38.94	44.06	50.01	54.25
2048	32.43	39.24	53.47	60.28	67.00	73.66

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 6.9°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
2	0.46	0.47	0.48	0.47	0.46	0.45
8	1.03	1.04	1.05	1.04	0.99	0.96
32	2.08	2.10	2.10	2.08	2.01	1.91
128	4.04	4.08	4.12	4.07	3.96	3.72
512	7.83	7.92	8.02	7.93	7.61	7.20
1024	10.69	10.78	11.00	10.87	10.48	9.95
2048	14.99	15.09	15.10	14.88	14.04	13.51

Dissociation Constants $\times 10^4$.

v	0°	6.9°	25°	35°	50°	65°
2	0.107	0.111	0.116	0.112	0.102	0.101
8	0.133	0.136	0.138	0.137	0.125	0.126
32	0.138	0.140	0.141	0.138	0.129	0.116
128	0.133	0.135	0.138	0.135	0.128	0.113
512	0.130	0.133	0.137	0.134	0.122	0.109
1024	0.125	0.127	0.123	0.130	0.120	0.108
2048	0.129	0.131	0.131	0.127	0.112	0.103

Temperature Coefficients in Conductivity Units.

v	0–6.9°	6.9–25°	25–35°	35–50°	50–65°
2	0.03	0.03	0.02	0.02	0.02
8	0.06	0.06	0.05	0.04	0.03
32	0.12	0.11	0.10	0.08	0.05
128	0.23	0.22	0.19	0.16	0.09
512	0.45	0.43	0.37	0.28	0.19
1024	0.61	0.59	0.51	0.40	0.28
2048	0.84	0.79	0.68	0.45	0.44

Temperature Coefficients in Per Cent.

v	0–6.9°	6.9–25°	25–35°	35–50°	50–65°
2	2.63	2.19	1.25	1.05	0.75
8	2.59	2.05	1.36	0.95	0.69
32	2.56	2.01	1.33	0.95	0.56
128	2.58	2.07	1.32	0.97	0.50
512	2.59	2.10	1.31	0.88	0.54
1024	2.56	2.11	1.31	0.91	0.57
2048	2.52	2.01	1.27	0.75	0.66

α-Brompropionic Acid (Wm.)

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 15°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
32	38.00	49.38	55.86	61.5	†	*
128	77.10	100.00	114.4	125.9	.....	.....
512	124.7	164.1	186.8	206.7	.....	.....
1024	151.7	200.8	229.5	257.0	.....	.....
2048	171.5	227.4	262.0	295.3	.....	.....

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 15°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
32	16.60	15.99	15.38	14.81	.....	.....
128	33.37	32.37	31.47	30.33	.....	.....
512	54.45	53.13	50.21	49.79	.....	.....
1024	66.25	65.01	62.98	61.90	.....	.....
2048	77.52	73.62	72.06	71.12	.....	.....

Dissociation Constants $\times 10^4$.

v	0°	15°	25°	35°	50°	65°
32	10.3	10.2	8.7	8.0	.....	.....
128	13.4	13.2	11.3	10.3	.....	.....
512	12.7	13.1	9.9	9.6	.....	.....
1024	12.7	13.5	10.6	9.8	.....	.....
2048	13.1	11.9	11.4	8.4	.....	.....

Temperature Coefficients in Conductivity Units.

v	0–15°	15–25°	25–35°	35–50°	50–65°
32	0.76	0.65	0.56	.....	†
128	1.53	1.44	1.15	.....	.....
512	2.63	2.27	1.99	.....	.....
1024	3.27	2.87	2.75	.....	.....
2048	3.70	3.46	3.33	.....	.....

Temperature Coefficients in Per Cent.

v	0–15°	15–25°	25–35°	35–50°	50–65°
32	2.00	1.31	1.00	‡	†
128	1.99	1.44	1.01	.....	.....
512	2.11	1.38	1.07	.....	.....
1024	2.16	1.43	1.17	.....	.....
2048	2.16	1.52	1.127	.....	.....

β-Iodopropionic Acid (Wm.)

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 15°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
8	6.30	8.42	9.73	11.12	§	§
32	12.57	16.81	19.37	21.98	.....	.....
128	23.79	31.86	36.67	41.69	.....	.....
512	44.36	59.47	68.42	78.04	.....	.....
1024	58.61	78.67	91.05	104.24	.....	.....
2048	76.55	102.87	118.35	135.40	.....	.....

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 15°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
8	2.84	2.78	2.75	2.74	.....	.....
32	5.66	5.55	5.48	5.42	.....	.....
128	10.71	10.56	10.37	10.29	.....	.....
512	19.97	19.64	19.35	19.26	.....	.....
1024	26.38	25.98	25.75	25.73	.....	.....
2048	34.46	33.98	33.47	33.42	.....	.....

Dissociation Constants $\times 10^4$.

v	0°	15°	25°	35°	50°	65°
8	1.04	1.00	0.97	0.97	.....	.....
32	1.04	1.02	0.99	0.97	.....	.....
128	1.00	0.97	0.94	0.93	.....	.....
512	0.97	0.94	0.91	0.90	.....	.....
1024	0.92	0.89	0.87	0.87	.....	.....
2048	0.89	0.85	0.82	0.82	.....	.....

Temperature Coefficients in Conductivity Units.

v	0–15°	15–25°	25–35°	35–50°	50–65°
8	0.14	0.13	0.14	.....	.....
32	0.28	0.26	0.26	.....	.....
128	0.54	0.48	0.50	.....	.....
512	1.01	0.89	0.96	.....	.....
1024	1.34	1.24	1.32	.....	.....
2048	1.75	1.55	1.70	.....	.....

Temperature Coefficients in Per Cent.

v	0–15°	15–25°	25–35°	35–50°	50–65°
8	2.23	1.56	1.43	.....	.....
32	2.25	1.52	1.35	.....	.....
128	2.26	1.51	1.37	.....	.....
512	2.27	1.51	1.41	.....	.....
1024	2.28	1.57	1.45	.....	.....
2048	2.29	1.51	1.44	.....	.....

*Decomposes very rapidly at this temperature. †Decomposes.
‡This acid decomposes slowly at 50°, but very rapidly at 65°.
§Decomposes slowly at 35°, and rapidly at higher temperatures.

Levulinic or β-Acetylpropionic Acid (Wm.).

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 15°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
8	2.939	4.114	4.851	5.539	6.463	7.19
32	5.85	8.24	9.71	11.10	12.96	14.39
128	11.57	16.13	19.08	21.84	25.54	28.38
512	22.06	30.78	36.37	41.68	48.08	51.79
1024	29.81	41.92	49.85	56.99	66.15	72.81
2048	39.41	56.31	66.24	76.53	86.98	95.76

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 15°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
8	1.33	1.38	1.39	1.40	1.39	1.36
32	2.65	2.76	2.79	2.80	2.78	2.71
128	5.24	5.41	5.48	5.50	5.48	5.35
512	9.99	10.32	10.44	10.50	10.32	9.77
1024	13.50	14.06	14.31	14.36	14.19	13.73
2048	17.84	18.89	19.02	19.28	18.66	18.06

Dissociation Constants $\times 10^4$.

v	0°	15°	25°	35°	50°	65°
8	0.224	0.234	0.245	0.249	0.244	0.233
32	0.225	0.238	0.250	0.252	0.249	0.237
128	0.226	0.235	0.248	0.250	0.248	0.236
512	0.217	0.226	0.238	0.241	0.232	0.207
1024	0.206	0.219	0.233	0.235	0.229	0.213
2048	0.189	0.209	0.218	0.225	0.209	0.194

Temperature Coefficients in Conductivity Units.

v	0–15°	15–25°	25–35°	35–50°	50–65°
8	0.078	0.074	0.069	0.062	0.048
32	0.160	0.147	0.139	0.124	0.095
128	0.304	0.295	0.276	0.247	0.189
512	0.581	0.559	0.531	0.43	0.247
1024	0.807	0.793	0.714	0.61	0.444
2048	1.126	0.993	1.029	0.70	0.585

Temperature Coefficients in Per Cent.

v	0–15°	15–25°	25–35°	35–50°	50–65°
8	2.66	1.79	1.42	1.12	0.75
32	2.74	1.78	1.43	1.12	0.74
128	2.63	1.83	1.45	1.15	0.74
512	2.63	1.82	1.46	1.03	0.51
1024	2.71	1.89	1.43	1.07	0.67
2048	2.86	1.76	1.55	0.91	0.67

n-Butyric Acid (Wt. and Sm.).

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 9.4°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
2	1.090	1.341	1.730	1.930	2.217	2.414
8	2.501	3.062	3.891	4.351	4.862	5.265
32	5.072	6.230	7.902	8.801	9.95	10.80
128	10.00	12.23	15.45	17.14	19.77	21.23
512	19.44	23.79	29.86	33.00	37.80	41.11
1024	26.82	32.83	41.22	45.26	.....	.....
2048	37.37	45.63	57.20	62.71	70.83	77.48

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 9.4°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
2	0.49	0.49	0.49	0.48	0.47	0.45
8	1.12	1.12	1.10	1.08	1.03	0.97
32	2.27	2.28	2.23	2.18	2.10	2.00
128	4.48	4.48	4.36	4.24	4.18	3.93
512	8.72	8.71	8.44	8.17	7.98	7.61
1024	12.02	12.02	11.64	11.20	.....	.....
2048	16.76	16.71	16.15	15.52	14.96	14.34

Dissociation Constants $\times 10^4$.

v	0°	9.4°	25°	35°	50°	65°
2	0.120	0.120	0.120	0.115	0.111	0.102
8	0.159	0.159	0.153	0.147	0.133	0.118
32	0.165	0.166	0.157	0.152	0.141	0.127
128	0.164	0.164	0.152	0.147	0.142	0.125
512	0.163	0.163	0.152	0.142	0.135	0.122
1024	0.161	0.161	0.150	0.138	.....	.....
2048	0.165	0.164	0.152	0.139	0.128	0.117

Temperature Coefficients in Conductivity Units.

v	0–9.4°	9.4–25°	25–35°	35–50°	50–65°
2	0.08	0.03	0.02	0.019	0.013
8	0.06	0.05	0.05	0.034	0.027
32	0.12	0.11	0.09	0.077	0.057
128	0.24	0.21	0.17	0.176	0.097
512	0.46	0.39	0.31	0.32	0.221
1024	0.64	0.54	0.41	.....	.....
2048	0.88	0.74	0.55	0.54	0.443

Temperature Coefficients in Per Cent.

v	0–9.4°	9.4–25°	25–35°	35–50°	50–65°
2	2.44	1.87	1.16	0.98	0.59
8	2.38	1.74	1.19	0.78	0.55
32	2.43	1.72	1.14	0.87	0.57
128	2.44	0.69	1.09	1.03	0.49
512	2.38	1.64	1.05	0.97	0.58
1024	2.38	1.64	0.98	.....	.....
2048	2.35	1.61	0.96	0.86	0.62

α-Brombutyric Acid (Wm.).

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 15°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
32	42.75	54.70	61.0	66.42	.....	.....
128	84.94	109.5	122.8	134.3	.....	.....
512	133.7	173.2	195.2	214.9	.....	.....
1024	160.6	209.3	239.8	266.0	.....	.....
2048	180.7	238.0	275.0	305.9	.....	.....

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 15°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
32	18.53	17.99	17.06	16.30	.....	.....
128	36.82	36.00	34.35	32.97	.....	.....
512	57.97	56.92	54.59	52.74	.....	.....
1024	69.61	68.82	67.08	65.30	.....	.....
2048	78.32	78.26	76.91	75.91	.....	.....

Dissociation Constants $\times 10^4$.

v	0°	15°	25°	35°	50°	65°
32	13.1	13.2	11.0	10.1	.....	.....
128	16.8	17.2	14.0	12.7	.....	.....
512	15.6	16.4	12.8	11.5	.....	.....
1024	15.6	17.0	13.2	12.0	.....	.....
2048	13.8	16.6	12.5	11.1	.....	.....

Temperature Coefficients in Conductivity Units.

v	0–15°	15–25°	25–35°	35–50°	50–65°
32	0.79	0.63	0.54	.....	.....
128	1.64	1.33	1.15	.....	.....
512	2.63	2.20	1.97	.....	.....
1034	3.25	3.05	2.62	.....	.....
2048	3.82	3.70	3.09	.....	.....

Temperature Coefficients in Per Cent.

v	0–15°	15–25°	25–35°	35–50°	50–65°
32	1.86	1.15	0.89	.....	.....
128	1.93	1.21	0.94	.....	.....
512	1.97	1.27	1.01	.....	.....
1024	2.02	1.46	1.09	.....	.....
2048	2.11	1.55	1.12	.....	.....

Isobutyric Acid (Wt. and Sm.).

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 16.46°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
2	1.034	1.450	1.633	1.841	1.969	2.109
8	2.453	3.412	3.821	4.272	4.409	4.76
32	4.912	6.809	7.621	8.514	8.831	9.44
128	9.736	13.48	15.13	16.90	17.60	18.60
512	18.91	26.01	29.30	32.70	33.71	35.81
1024	26.32	36.18	40.90	45.54	46.27	49.01
2048	35.96	49.22	55.01	61.35	60.92	64.01

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 16.46°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
2	0.47	0.47	0.46	0.46	0.45	0.45
8	1.10	1.10	1.08	1.06	1.01	1.02
32	2.20	2.20	2.15	2.11	2.02	2.02
128	4.37	4.35	4.27	4.18	4.02	3.97
512	8.48	8.39	8.28	8.09	7.71	7.64
1024	11.80	11.67	11.55	11.27	10.58	10.46
2048	16.13	15.88	15.54	15.19	13.93	13.66

Dissociation Constants $\times 10^4$.

v	0°	16.46°	25°	35°	50°	65°
2	0.108	0.110	0.108	0.108	0.102	0.102
8	0.153	0.153	0.147	0.141	0.128	0.131
32	0.155	0.154	0.148	0.142	0.130	0.129
128	0.156	0.154	0.149	0.143	0.131	0.128
512	0.154	0.150	0.146	0.139	0.125	0.123
1024	0.154	0.150	0.147	0.140	0.122	0.119
2048	0.151	0.146	0.140	0.133	0.110	0.105

Temperature Coefficients in Conductivity Units.

v	0–16.46°	16.46–25°	25–35°	35–50°	50–65°
2	0.03	0.02	0.02	.....	0.009
8	0.06	0.05	0.05	.....	0.024
32	0.12	0.10	0.09	.....	0.041
128	0.23	0.19	0.18	.....	0.067
512	0.43	0.36	0.34	.....	0.14
1024	0.60	0.51	0.46	.....	0.18
2048	0.81	0.68	0.63	.....	0.21

Temperature Coefficients in Per Cent.

v	0–16.46°	16.46–25°	25–35°	35–50°	50–65°
2	2.45	1.48	1.27	.....	0.47
8	2.38	1.40	1.18	.....	0.54
32	2.35	1.40	1.17	.....	0.46
128	2.33	1.43	1.17	.....	0.38
512	2.28	1.41	1.16	.....	0.41
1024	2.28	1.41	1.13	.....	0.39
2048	2.24	1.38	1.15	.....	0.34

Note—Solutions more concentrated than $v = 128$ decompose at 35°, and all dilutions decompose rapidly at 50°.

Hydroxyisobutyric Acid (Wm.).

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 15°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
8	6.075	8.553	10.147	11.576	13.32	14.73
32	12.11	17.04	20.19	22.97	26.84	29.43
128	23.50	33.04	39.18	44.65	51.41	56.78
512	44.06	61.74	73.16	83.41	96.52	106.80
1024	58.80	81.95	97.00	111.60	128.30	141.80
2048	76.78	106.95	126.20	144.07	166.10	181.40

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 15°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
8	2.75	2.838	2.89	2.89	2.83	2.72
32	5.47	5.653	5.75	5.74	5.70	5.43
128	10.62	10.96	11.15	11.15	10.91	10.48
512	19.92	20.48	20.82	20.84	20.48	19.71
1024	25.58	27.19	27.61	27.88	27.23	26.17
2048	34.70	35.48	35.92	36.00	35.24	33.48

Dissociation Constants $\times 10^4$.

v	0°	15°	25°	35°	50°	65°
8	0.97	1.05	1.08	1.08	1.03	0.95
32	0.99	1.06	1.10	1.10	1.08	0.98
128	0.99	1.17	1.09	1.09	1.05	0.96
512	0.97	1.03	1.07	1.07	1.03	0.95
1024	0.94	0.99	1.03	1.08	1.00	0.91
2048	0.90	0.95	0.98	0.99	0.94	0.82

Temperature Coefficients in Conductivity Units.

v	0–15°	15–25°	25–35°	35–50°	50–65°
8	0.16	0.16	0.14	0.12	0.094
32	0.33	0.31	0.28	0.26	0.17
128	0.64	0.61	0.55	0.45	0.36
512	1.18	1.14	1.03	0.88	0.68
1024	1.54	1.51	1.46	1.11	0.90
2048	2.01	1.93	1.79	1.47	1.02

Temperature Coefficients in Per Cent.

v	0–15°	15–25°	25–35°	35–50°	50–65°
8	2.72	1.86	1.41	1.00	0.71
32	2.71	1.85	1.38	1.13	0.65
128	2.71	1.86	1.40	1.01	0.70
512	2.68	1.85	1.40	1.06	0.71
1024	2.62	1.84	1.50	1.01	0.70
2048	2.62	1.80	1.41	1.02	0.61

Isovaleric Acid (Wm.).

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 15°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
8	2.573	3.391	3.869	4.392	4.877	5.115
32	5.365	7.061	8.052	8.927	9.89	10.57
128	10.68	14.04	16.01	17.68	19.52	20.94
512	20.52	26.97	30.74	33.71	36.95	39.92
1024	28.28	37.11	42.18	46.33	50.85	53.48
2048	37.16	49.90	56.86	62.55	69.79	72.93

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 15°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
8	1.16	1.13	1.11	1.07	1.04	0.96
32	2.42	2.36	2.30	2.24	2.11	1.98
128	4.81	4.69	4.57	4.34	4.17	3.93
512	9.24	9.00	8.78	8.44	7.90	7.49
1024	12.34	12.38	12.05	11.60	11.87	10.03
2048	16.74	16.65	16.25	15.66	14.91	13.68

Dissociation Constants $\times 10^4$.

v	0°	15°	25°	35°	50°	65°
8	0.170	0.162	0.154	0.145	0.137	0.116
32	0.187	0.178	0.169	0.160	0.143	0.125
128	0.189	0.180	0.171	0.160	0.142	0.126
512	0.184	0.180	0.165	0.152	0.132	0.119
1024	0.170	0.171	0.161	0.149	0.130	0.109
2048	0.164	0.162	0.154	0.140	0.128	0.101

Temperature Coefficients in Conductivity Units.

v	0–15°	15–25°	25–35°	35–50°	50–65°
8	0.055	0.048	0.052	0.032	0.016
32	0.113	0.099	0.087	0.064	0.045
128	0.224	0.197	0.167	0.123	0.095
512	0.430	0.377	0.297	0.216	0.138
1024	0.589	0.507	0.415	0.301	0.175
2048	0.844	0.686	0.569	0.483	0.209

Temperature Coefficients in Per Cent.

v	0–15°	15–25°	25–35°	35–50°	50–65°
8	2.12	1.41	1.35	0.74	0.33
32	2.10	1.40	1.07	0.72	0.46
128	2.10	1.40	1.04	0.70	0.49
512	2.10	1.40	0.97	0.64	0.37
1024	2.08	1.37	0.98	0.65	0.34
2048	2.28	1.39	1.00	0.77	0.45

Caprylic Acid (Wm.).

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 15°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
512	.....	.....	27.79	31.07	34.52	37.53
1024	24.39	32.76	37.84	42.35	47.28	50.57
2048	32.84	44.08	51.08	56.89	63.69	66 26

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 15°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
512	.....	.....	7.96	7.80	7.43	6.96
1024	10.84	10.89	10.84	10.64	10.18	9.38
2048	14.60	14.65	14.63	14.29	13.71	12.29

Dissociation Constants $\times 10^4$.

v	0°	15°	25°	35°	50°	65°
512	.....	.....	0.134	0.129	0.117	0.102
1024	0.129	0.130	0.129	0.124	0.113	0.095
2048	0 122	0.123	0.123	0.116	0.106	0.084

Temperature Coefficients in Conductivity Units.

v	0–15°	15–25°	25–35°	35–50°	50–65°
512	.....	.....	0.33	0.23	0.20
1024	0.56	0.51	0.45	0.33	0.22
2048	0.75	0.70	0.47	0.45	0.17

Temperature Coefficients in Per Cent.

v	0–15°	15–25°	25–35°	35–50°	50–65°
512	.....	.....	1.18	0.74	0.58
1024	2.29	1.55	1.17	0.78	0.46
2048	2.28	1.58	1 12	0.80	.....

Malonic Acid (Wt. and C.).

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 4.9°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
2	11.81	13.34	19.61	22.51	.....	.....
4	.....	.....	.....	.....	37.38	41.47
8	23.19	26.20	38.40	44.03	.....	.....
16	.....	.....	.....	.....	71.76	79.73
32	43.51	49.25	72.23	82.55	.....	.....
64	.....	.....	.....	.....	130.8	.....
128	78.30	88.83	129.8	148.2	173.8	145.8
512	127.1	143.4	208.7	237.4	277.8	191.7
1024	153.3	173.2	251.2	284.8	331.6	310.9
2048	176.9	199.1	289.1	327.6	.....	.....

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 4.9°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
2	5.30	5.34	5.53	5.55	.....	.....
8	10.40	10.48	10.81	10.87	.....	.....
32	19.57	19.70	20.34	20.38	.....	.....
128	35.12	35.53	36.58	36.59	36.43	35.11
512	56.99	57.36	58.80	58.60	58.24	56.94
1024	68.74	69.28	70.76	70.31	69.52	.....
2048	79.32	79.66	81.45	80.89	.....	.....

Dissociation Constants $\times 10^4$.

v	0°	4.9°	25°	35°	50°	65°
2	14.8	15.0	16.1	16.4	.....	.....
8	15.1	15.3	16.4	16.5	.....	.....
32	14.8	15.1	16.3	16.3	.....	.....
128	14.8	15.3	16.4	16.5	.....	.....
512	14.8	15.1	16.4	16.2	16.3	14.8
1024	14.8	15.3	16.7	16.3	15.9	14.7
2048	14.9	15.3	17.5	16.8	15.5	.....

Temperature Coefficients in Conductivity Units.

v	0–4.9°	4.9–25°	25–35°	35–50°	50–65°
2	0.31	0.31	0.29	.....	.....
4	.....	.....	.....	.....	0.27
8	0.61	0.61	0.58	.....	.....
16	.....	.....	.....	.....	0.53
32	1.17	1.14	1.03	.....	.....
64	.....	.....	.....	.....	1.00
128	2.09	2.04	1.84	1.70	1.19
512	3.33	3.25	2.87	2.70	2.21
1024	4.06	3.88	3.36	3.12	.....
2048	4.53	4.48	3.75	.....	.....

Temperature Coefficients in Per Cent.

v	0–4.9°	4.9–25°	25–35°	35–50°	50–65°
2	2.64	2.34	1.48	.....	.....
4	.....	.....	.....	.....	0.73
8	2.66	2.32	1.47	.....	.....
16	.....	.....	.....	.....	0.74
32	2.69	2.32	1.43	.....	.....
64	.....	.....	.....	.....	0.76
128	2.67	2.30	1.42	1.15	0.68
512	2.62	2.27	1.38	1.14	0.80
1024	2.65	2.24	1.34	1.09	.....
2048	2.56	2.25	1.30	.....	.....

Dimethylmalonic Acid (Sp.).

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 15°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
8	16.08	22.06	25.82	29.27	34.10	38.10
32	32.00	43.76	51.23	58.41	68.80	77.10
128	59.00	80.57	94.61	107.29	124.82	139.53
512	101.42	136.94	160.28	182.49	217.20	240.72
1024	124.10	169.74	198.93	226.05	266.68	299.26
2048	151.89	205.71	241.10	273.66	314.71	349.53

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 15°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
8	7.24	7.35	7.34	7.32	7.25	7.07
32	14.40	14.59	14.56	14.62	14.63	14.30
128	26.55	26.86	26.89	26.85	26.56	25.88
512	45.64	45.65	45.56	45.66	46.17	44.66
1024	55.85	56.58	56.55	56.56	56.72	55.52
2048	68.36	68.57	68.53	68.48	67.00	64.75

Dissociation Constants $\times 10^4$.

v	0°	15°	25°	35°	50°	65°
8	7.06	7.28	7.27	7.27	7.08	6.72
32	7.57	7.79	7.75	7.82	7.82	7.45
128	7.50	7.71	7.73	7.70	7.51	7.06
512	7.48	7.49	7.45	7.50	7.69	7.04
1024	6.90	7.20	7.21	7.20	7.26	6.77
2048	7.21	7.30	7.29	7.28	6.64	5.84

Temperature Coefficients in Conductivity Units.

v	0–15°	15–25°	25–35°	35–50°	50–65°
8	0.40	0.38	0.35	0.32	0.27
32	0.78	0.75	0.72	0.69	0.55
128	1.44	1.40	1.27	1.17	0.98
512	2.37	2.33	2.22	2.13	1.57
1024	3.04	2.92	2.71	2.71	2.17
2048	3.59	3.54	3.26	2.74	2.32

Temperature Coefficients in Per Cent.

v	0–15°	15–25°	25–35°	35–50°	50–65°
8	2.44	1.70	1.34	1.08	0.79
32	2.43	1.70	1.40	1.18	0.80
128	2.42	1.74	1.34	1.09	0.79
512	2.33	1.70	1.38	1.17	0.72
1024	2.45	1.72	1.36	1.18	0.82
2048	2.36	1.72	1.35	1.00	0.74

Ethylmalonic Acid (Sp.).

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 15°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
8	20.85	28.08	32.62	36.64	41.67	46.09
32	40.90	55.22	64.42	72.53	82.52	90.66
128	73.08	98.35	114.55	129.09	146.60	161.77
512	119.83	161.73	188.90	213.00	243.30	269.91
1024	146.45	197.80	231.24	260.00	297.95	330.62
2048	166.73	225.40	263.52	298.32	345.30	384.70

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 15°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
8	9.38	9.34	9.27	9.17	8.85	8.55
32	18.41	18.38	18.31	18.15	17.56	16.82
128	32.89	32.73	32.56	32.30	31.20	30.01
512	53.93	53.82	53.70	53.30	51.77	50.08
1024	65.91	65.83	65.72	65.06	63.40	61.34
2048	75.04	75.00	74.91	74.65	73.47	71.37

Dissociation Constants $\times 10^4$.

v	0°	15°	25°	35°	50°	65°
8	12.1	12.0	11.8	11.6	10.7	10.0
32	12.9	12.9	12.8	12.5	11.6	10.6
128	12.6	12.4	12.3	12.0	11.0	10.0
512	12.3	12.2	12.2	11.9	10.9	9.8
1024	12.4	12.3	12.3	11.8	10.7	9.5

Temperature Coefficients in Conductivity Units.

v	0–15°	15–25°	25–35°	35–50°	50–65°
8	0.48	0.45	0.40	0.34	0.29
32	0.95	0.92	0.81	0.67	0.54
128	1.68	1.62	1.45	1.70	1.01
512	2.79	2.72	2.41	2.02	1.64
1024	3.42	3.34	2.88	2.53	2.18
2048	3.91	3.81	3.48	3.13	2.63

Temperature Coefficients in Per Cent.

v	0–15°	15–25°	25–35°	35–50°	50–65°
8	2.13	1.61	1.23	0.91	0.71
32	2.33	1.66	1.27	0.92	0.66
128	2.30	1.65	1.26	0.90	0.69
512	2.33	1.68	1.27	0.95	0.67
1024	2.33	1.69	1.25	0.97	0.71
2048	2.35	1.69	1.32	1.04	0.76

Diethylmalonic Acid (Sp.).

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 15°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
8	52.38	67.87	76.92	84.66	94.03	100.32
32	92.77	121.64	138.84	153.60	174.26	186.22
128	141.81	187.35	215.34	240.20	274.96	299.01
512	189.03	252.30	292.24	328.73	378.84	422.61
1024	201.22	268.24	311.98	353.56	413.66	462.78
2048	201.63	272.23	317.25	360.50	424.37	471.64

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 15°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
8	23.88	22.92	22.22	21.49	20.23	18.79
32	42.29	41.08	40.10	39.00	37.49	34.87
128	64.65	63.27	62.19	60.98	59.15	56.00
512	86.17	85.21	84.40	83.46	81.56	79.14
1024	91.73	90.59	90.10	89.76	89.00	86.66
2048	91.92	91.94	91.62	91.52	91.30	88.32

Dissociation Constants $\times 10^4$.

v	0°	15°	25°	35°	50°	65°
8	.....	.....	.....	.....	.....	.....
32	.....	.....	.....	.....	.....	.....
128	.....	.....	.....	.....	.....	.....
512	.....	.....	.....	.....	.....	.....
1024	.....	.....	.....	.....	.....	.....
2048	.....	.....	.....	.....	.....	.....

Temperature Coefficients in Conductivity Units.

v	0–15°	15–25°	25–35°	35–50°	50–65°
8	1.03	0.91	0.77	0.73	0.42
32	1.92	1.72	1.48	1.38	0.80
128	3.04	2.80	2.49	2.33	1.67
512	4.22	3.99	3.65	3.34	2.92
1024	4.47	4.37	4.16	4.01	3.27
2048	4.71	4.50	4.32	4.26	3.83

Temperature Coefficients in Per Cent.

v	0–15°	15–25°	25–35°	35–50°	50–65°
8	1.97	1.33	1.00	0.85	0.44
32	2.07	1.41	1.06	0.89	0.46
128	2.14	1.49	1.15	0.97	0.61
512	2.23	1.58	1.25	1.01	0.77
1024	2.22	1.63	1.33	1.13	0.79
2048	2.33	1.65	1.36	1.18	0.90

Methylethylmalonic Acid (Sp.).

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 15°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
8	23.60	31.90	37.34	42.22	48.28	54.11
32	45.89	61.89	72.45	82.00	93.61	104.35
128	81.39	110.44	129.71	147.18	168.51	188.20
512	129.95	175.96	206.32	234.00	269.50	304.26
1024	156.21	211.25	248.19	280.01	323.20	365.54
2048	178.18	240.31	280.64	315.06	365.46	411.58

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 15°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
8	10.68	10.67	10.67	10.61	10.39	10.15
32	20.78	20.70	20.71	20.61	20.17	19.58
128	36.85	36.94	37.08	36.99	36.31	35.31
512	58.84	58.85	58.99	58.81	58.08	57.08
1024	70.73	70.66	70.96	70.37	69.65	68.58
2048	80.68	80.38	80.24	79.18	78.76	77.22

Dissociation Constants $\times 10^4$.

v	0°	15°	25°	35°	50°	65°
8	16.0	15.9	15.9	15.7	15.6	14.3
32	17.0	16.9	16.9	16.7	15.9	14.5
128	16.8	16.9	17.1	17.0	16.1	15.0
512	16.4	16.4	16.6	16.4	15.7	14.8
1024	16.7	16.6	16.9	16.3	15.6	14.6
2048	16.5	16.1	15.9	15.0	14.3	12.8

Temperature Coefficients in Conductivity Units.

v	0–15°	15–25°	25–35°	35–50°	50–65°
8	0.55	0.54	0.49	0.40	0.39
32	1.07	1.06	0.95	0.77	0.72
128	1.94	1.93	1.75	1.42	1.31
512	3.07	3.04	2.77	2.37	2.32
1024	3.67	3.69	3.18	2.88	2.82
2048	4.14	4.03	3.44	3.36	3.07

Temperature Coefficients in Per Cent.

v	0–15°	15–25°	25–35°	35–50°	50–65°
8	2.34	1.70	1.30	0.96	0.72
32	2.33	1.71	1.31	0.94	0.76
128	2.38	1.74	1.34	0.96	0.77
512	2.36	1.72	1.34	1.01	0.85
1024	2.35	1.75	1.28	1.02	0.87
2048	2.32	1.70	1.23	1.07	0.83

Isopropylmalonic Acid (Sp.).

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 15°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
32	40.07	54.69	64.92	73.63	84.05	91.73
128	72.21	98.65	117.00	132.34	151.88	168.00
512	118.6	161.6	192.95	217.62	248.81	278.36
1024	144.1	197.0	234.00	264.40	307.7	343.80
2048	167.4	228.9	272.20	307.9	357.0	402.50

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 15°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
32	18.14	18.29	18.56	18.50	18.11	17.21
128	32.69	33.00	33.45	33.26	32.73	31.52
512	53.70	54.04	55.15	54.69	53.62	52.23
1024	65.24	65.89	66.89	66.44	66.31	64.50
2048	75.79	76.59	77.80	77.30	75.94	75.51

Dissociation Constants $\times 10^4$.

v	0°	15°	25°	35°	50°	65°
32	12.5	12.8	13.2	13.1	12.5	11.2
128	12.4	12.7	13.1	12.9	12.5	11.3
512	12.2	12.4	13.2	12.9	12.1	11.2
1024	12.0	12.4	13.2	12.8	12.5	11.4
2048	11.6	12.2	13.3	12.9	12.5	11.3

Temperature Coefficients in Conductivity Units.

v	0–15°	15–25°	25–35°	35–50°	50–65°
32	0.97	1.02	0.87	0.69	0.51
128	1.76	1.83	1.53	1.30	1.07
512	2.86	3.14	2.47	2 08	1.97
1204	3.53	3.70	3.04	2.89	2.41
2048	4.10	4.32	3.77	3.27	3.03

Temperature Coefficients in Per Cent.

v	0–15°	15–25°	25–35°	35–50°	50–65°
32	2.43	1.87	1.34	0.94	0.61
128	2.43	1.86	1.31	0.98	0.71
512	2.41	1.88	1.28	0.96	0.79
1024	2.45	1.88	1.30	0.92	0.78
2048	2.45	1.88	1.38	1.06	0.85

Dipropylmalonic Acid (Sp.).

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 15°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
32	103.16	135.09	154.54	170.31	.....	.....
128	152.25	204.36	234.92	261.75	297.53	304.18
512	192.10	258.80	300.65	339.30	386.50	430.81
1204	203.51	272.90	317.78	359.10	417.00	468.00
2048	209.35	281.11	328.93	372.98	434.61	490.90

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 15°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
32	47.18	45.78	44.70	43.35	.....	.....
128	69.63	69.25	67.95	66.60	64.96	62.34
512	87.85	87.70	86.97	86.35	84.40	82.77
1024	93.07	92.48	91.92	91.41	91.06	90.00
2048	95.74	95.26	95.15	94.93	94.89	94.40

Dissociation Constants $\times 10^4$.

v	0°	15°	25°	35°	50°	65°
32	132.0	121.0	113.0	104.0	.....	.....
128	125.0	121.0	113.0	104.0	90	81
512	124.0	122.0	113.0	106.0	89	78
1024	122.0	111.0	102.0	95.0	90	79
2048	105.0	93.0	91.0	90.0	90	78

Temperature Coefficients in Conductivity Units.

v	0–15°	15–25°	25–35°	35–50°	50–65°
32	2.13	1.94	1.58	.....	.....
128	3.47	3.06	2.68	2.39	1.78
512	4.45	4.18	3.86	3.15	2.95
1024	4.63	4.49	4.14	3.86	3.40
2048	4.78	4.78	4.41	4.11	3.75

Temperature Coefficients in Per Cent.

v	0–15°	15–25°	25–35°	35–50°	50–65°
32	2.06	1.41	..1.02	.....	.....
128	2.28	1.49	1.14	0.91	0.60
512	2.31	1.62	1.28	0.93	0.74
1024	2.27	1.64	1.30	1.09	0.81
2048	2.29	1.70	1.34	1.10	0.86

Butylmalonic Acid (Normal) (Sp.).

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 15°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
32	37.53	50.60	58.72	66.30	76.00	83.93
128	68.80	92.04	107.34	121.86	141.00	156.00
512	113.8	154.2	180.90	204.84	236.22	264.25
1024	140.0	187.2	218.3	248.0	286.2	320.1
2048	163.7	218.8	255.4	291.3	340.0	382.6

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 15°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
32	17.11	17.09	16.96	16.83	16.35	15.71
128	31.36	31.08	31.00	30.92	30.33	29.21
512	51.88	52.08	52.25	52.00	50.82	49.48
1024	63.82	63.22	63.05	62.96	61.57	60.00
2048	74.62	73.89	73.48	73.95	73.15	71.65

Dissociation Constants $\times 10^4$.

v	0°	15°	25°	35°	50°	65°
32	11.0	11.0	10.8	10.6	10.0	9.15
128	11.2	11.0	10.9	10.8	10.3	9.4
512	10.9	11.0	11.1	11.0	10.2	9.5
1024	11.0	10.6	10.5	10.4	9.6	8.8
2048	10.7	10.2	10.0	10.3	9.7	8.8

Temperature Coefficients in Conductivity Units.

v	0–15°	15–25°	25–35°	35–50°	50–65°
32	0.87	0.81	0.78	0.65	0.53
128	1.55	1.53	1.45	1.28	1.00
512	2.69	2.67	2.39	2.09	1.87
1024	3.15	3.11	2.97	2.55	2.26
2048	3.67	3.66	3.59	3.25	2.84

Temperature Coefficients in Per Cent.

v	0–15°	15–25°	25–35°	35–50°	50–65°
32	2.32	1.60	1.32	0.98	0.69
128	2.25	1.66	1.35	1.04	0.71
512	2.36	1.73	1.32	1.02	0.79
1024	2.25	1.66	1.36	1.02	0.79
2048	2.23	1.67	1.40	1.11	0.83

Benzylmalonic Acid (Sp.).

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 15°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
32	45.06	60.54	69.82	78.31	89.05	97.76
128	80.22	107.44	124.99	140.37	160.03	175.82
512	128.30	171.80	199.60	225.13	258.98	285.80
1024	153.05	205.65	239.44	269.62	310.79	345.35
2048	177.75	236.16	273.66	310.02	357.93	395.32

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 15°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
32	20.57	20.48	20.19	19.91	19.18	18.33
128	36.63	36.34	36.16	35.70	34.49	32.98
512	58.58	58.11	57.74	57.24	55.81	53.62
1024	69.88	69.56	69.26	68.57	66.98	64.79
2048	81.16	79.89	79.16	78.86	77.14	74.16

Dissociation Constants $\times 10^4$.

v	0°	15°	25°	35°	50°	65°
32	16.6	16.5	16.0	15.5	14.2	12.8
128	16.5	16.2	16.0	15.5	14.1	12.7
512	16.2	15.7	15.4	15.0	13.8	12.1
1024	15.8	15.5	15.2	14.6	13.3	11.7
2048	17.0	15.5	14.7	14.4	12.7	10.4

Temperature Coefficients in Conductivity Units.

v	0–15°	15–25°	25–35°	35–50°	50–65°
32	1.03	0.93	0.85	0.72	0.57
128	1.81	1.75	1.54	1.31	1.05
512	2.90	2.78	2.55	2.26	1.79
1024	3.50	3.38	3.02	2.75	2.30
2048	3.89	3.85	3.64	3.19	2.49

Temperature Coefficients in Per Cent.

v	0–15°	15–25°	25–35°	35–50°	50–65°
32	2.29	1.53	1.22	0.91	0.65
128	2.20	1.57	1.23	0.93	0.66
512	2.29	1.61	1.27	1.00	0.69
1024	2.29	1.64	1.26	1.02	0.74
2048	2.19	1.63	1.32	1.04	0.69

Allylmalonic Acid (Sp.).

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 15°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
8	24.25	32.63	37.73	42.26	48.94	53.61
32	45.62	61.58	71.47	80.30	92.02	101.16
128	80.81	109.08	126.33	142.15	164.78	181.65
512	130.49	176.28	204.36	231.00	264.51	293.23
1024	158.93	214.00	248.67	281.00	322.75	358.28
2048	176.38	237.89	277.43	313.85	358.56	401.52

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 15°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
8	10.95	10.90	10.76	10.56	10.46	9.98
32	20.60	20.57	20.37	20.07	19.66	18.84
128	36.49	36.43	36.01	35.54	35.21	33.82
512	58.93	58.87	58.26	57.75	56.52	54.61
1024	71.77	71.47	70.89	70.25	68.96	66.72
2048	79.65	79.45	79.08	78.46	76.62	74.77

Dissociation Constants $\times 10^4$.

v	0°	15°	25°	35°	50°	65°
8	16.8	16.6	16.2	15.6	15.3	13.8
32	16.7	16.6	16.2	15.7	15.0	13.7
128	16.4	16.3	15.8	15.3	14.9	13.5
512	16.5	16.5	15.9	15.4	14.4	12.8
1024	.....	.....	.....	.....	14.9	13.1

Temperature Coefficients in Conductivity Units.

v	0–15°	15–25°	25–35°	35–50°	50–65°
8	0.56	0.51	0.45	0.44	0.31
32	1.06	0.99	0.88	0.78	0.61
128	1.88	1.72	1.58	1.51	1.12
512	3.05	2.81	2.66	2.23	1.92
1024	3.67	3.47	3.23	2.78	2.37
2048	4.10	3.95	3.64	2.98	2.86

Temperature Coefficients in Per Cent.

v	0–15°	15–25°	25–35°	35–50°	50–65°
8	2.30	1.56	1.20	1.05	0.63
32	2.33	1.60	1.23	0.98	0.66
128	2.33	1.58	1.25	1.06	0.68
512	2.33	1.59	1.30	0.97	0.72
1024	2.31	1.62	1.30	0.99	0.73
2048	2.32	1.66	1.31	0.95	0.79

Succinic Acid (Wt. and C.).

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 5.7°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
8	4.570	5.371	8.032	9.251	11.00	12.40
32	9.211	10.72	16.01	18.36	21.94	24.71
128	18.24	21.35	31.24	35.80	42.64	48.07
512	34.75	40.59	59.34	67.87	82.36	91.17
1024	47.89	55.91	81.31	92.89	109.9	125.4
2048	64.61	75.29	109.6	124.8	145.8	162.7

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 5.7°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
8	2.05	2.15	2.26	2.28	2.33	2.30
32	4.13	4.29	4.51	4.53	4.64	4.58
128	8.18	8.54	8.80	8.84	9.03	8.91
512	15.58	16.24	16.72	16.76	17.43	16.90
1024	20.47	22.37	22.91	22.91	23.26	23.25
2048	28.97	30.11	30.88	30.81	30.86	30.17

Dissociation Constants $\times 10^4$.

v	0°	5.7°	25°	35°	50°	65°
8	0.537	0.590	0.655	0.667	0.695	0.677
32	0.556	0.600	0.666	0.673	0.705	0.687
128	0.569	0.623	0.664	0.670	0.701	0.681
512	0.562	0.615	0.655	0.659	0.719	0.671
1024	0.572	0.629	0.665	0.665	0.688	0.688
2048	0.577	0.634	0.675	0.670	0.673	0.637

Temperature Coefficients in Conductivity Units.

v	0–5.7°	5.7–25°	25–35°	35–50°	50–65°
8	0.14	0.14	0.12	0.12	0.09
32	0.28	0.27	0.24	0.24	0.18
128	0.55	0.51	0.46	0.46	0.36
512	1.02	0.97	0.85	0.90	0.59
1024	1.41	1.32	1.16	1.13	1.03
2048	1.87	1.78	1.52	1.40	1.13

Temperature Coefficients in Per Cent.

v	0–5.7°	5.7–25°	25–35°	35–50°	50–65°
8	3.07	2.57	1.52	1.30	0.84
32	3.03	2.56	1.47	1.31	0.84
128	2.99	2.40	1.46	1.29	0.85
512	2.95	2.39	1.44	1.33	0.71
1024	2.94	2.36	1.42	1.21	0.94
2048	2.90	2.36	1.39	1.12	0.77

Monobromsuccinic Acid (Sp.).

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 15°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
128	101.46	136.01	158.19	.....	.....	.....
512	156.00	210.27	246.72	.....	.....	.....
1024	189.44	252.44	293.74	.....	.....	.....
2048	208.37	283.02	328.50	.....	.....	.....

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 15°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
128	45.66	45.02	44.67	.....	.....	.....
512	70.20	70.40	69.66	.....	.....	.....
1024	85.25	83.55	82.94	.....	.....	.....
2048	93.77	93.67	92.76	.....	.....	.....

Dissociation Constants $\times 10^4$.

v	0°	15°	25°	35°	50°	65°
128	30.0	28.8	28.2	.....	.....	.....
512	32.3	32.7	31.2	.....	.....	.....
1024	48.1	41.4	39.4	.....	.....	.....
2048	68.9	67.7	58.0	.....	.....	.....

Temperature Coefficients in Conductivity Units.

v	0–15°	15–25°	25–35°	35–50°	50–65°
128	2.30	2.21	.....	.....	.....
512	3.62	3.60	.....	.....	.....
1024	4.20	4.13	.....	.....	.....
2048	4.71	4.55	.....	.....	.....

Temperature Coefficients in Per Cent.

v	0–15°	15–25°	25–35°	35–50°	50–65°
128	2.27	1.60	.....	.....	.....
512	2.32	1.62	.....	.....	.....
1024	2.22	1.60	.....	.....	.....
2048	2.26	1.61	.....	.....	.....

Dibromsuccinic Acid (Sp.).

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 15°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
32	175.64	222.20	245.56	262.92	293.37	342.63
128	254.34	326.83	367.56	399.68	448.57	509.85
512	339.15	438.40	497.38	546.48	614.97	685.91
1024	381.64	501.79	571.44	634.97	707.13	786.10
2048	416.07	550.04	631.94	704.86	792.16	879.40

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 15°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
128	.....	.....	.....	.....	.....	.....
512	.....	.....	.....	.....	.....	.....
1024	.....	.....	.....	.....	.....	.....
2048	.....	.....	.....	.....	.....	.....

Dissociation Constants $\times 10^4$.

v	0°	15°	25°	35°	50°	65°
128	.....	.....	.....	.....	.....	.....
512	.....	.....	.....	.....	.....	.....
1024	.....	.....	.....	.....	.....	.....
2048	.....	.....	.....	.....	.....	.....

Temperature Coefficients in Conductivity Units.

v	0–15°	15–25°	25–35°	35–50°	50–65°
32	3.10	2.34	1.74	2.03	3.28
128	4.83	4.07	3.21	3.26	4.08
512	6.62	5.99	4.91	4.56	4.73
1024	8.01	6.96	6.35	4.81	5.26
2048	8.93	8.19	7.39	5.82	5.82

Temperature Coefficients in Per Cent.

v	0–15°	15–25°	25–35°	35–50°	50–65°
32	1.77	1.05	0.71	0.77	1.09
128	1.89	1.24	0.87	0.82	0.91
512	1.95	1.34	0.98	0.83	0.77
1024	2.10	1.39	1.11	0.76	0.74
2048	2.14	1.49	1.15	0.83	0.73

*Decomposed at higher temperatures.

Pyrotartaric Acid (Wt. and Sm.).

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 12°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
8	5.403	7.150	9.045	10.41	12.10	13.77
32	10.94	14.41	18.13	20.80	24.36	27.28
128	21.08	27.68	35.00	40.00	46.80	52.92
512	40.45	53.06	67.02	76.56	86.64	98.14
1024	54.18	71.31	89.73	102.4	157.90	.....
2048	73.00	96.00	120.3	137.7	.....	176.35

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 12°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
8	2.44	2.46	2.59	2.62	2.58	2.58
32	4.95	4.97	5.20	5.24	5.20	5.11
128	9.54	9.55	10.03	10.08	10.00	9.92
512	18.30	18.30	19.21	19.29	18.51	18.41
1024	24.51	24.60	25.71	25.79	.....	.....
2048	33.03	33.11	34.46	34.69	33.73	33.08

Dissociation Constants $\times 10^4$.

v	0°	12°	25°	35°	50°	65°
8	0.77	0.78	0.86	0.89	0.85	0.85
32	0.81	0.81	0.89	0.90	0.89	0.85
128	0.79	0.79	0.87	0.88	0.86	0.85
512	0.80	0.80	0.89	0.90	0.82	0.81
1024	0.78	0.78	0.87	0.88	0.83	0.79
2048	0.80	0.80	0.88	0.90	.....	.....

Temperature Coefficients in Conductivity Units.

v	0–12°	12–25°	25–35°	35–50°	50–65°
8	0.15	0.15	0.14	0.11	0.11
32	0.29	0.29	0.27	0.24	0.29
128	0.56	0.56	0.50	0.45	0.38
512	1.05	1.07	0.95	0.67	0.76
1024	1.43	1.42	1.27	.....	.....
2048	1.92	1.87	1.74	1.35	1.23

Temperature Coefficients in Per Cent.

v	0–12°	12–25°	25–35°	35–50°	50–65°
8	2.70	2.04	1.49	1.06	0.82
32	2.64	1.99	1.47	1.15	0.79
128	2.61	2.03	1.43	1.13	0.82
512	2.60	2.02	1.42	0.88	0.88
1024	2.63	1.99	1.42	.....	.....
2048	2.62	1.95	1.45	0.99	0.77

L-Tartaric Acid (Wm.).

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 15°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
8	15.64	22.58	26.93	31.12	.....	.....
32	34.18	49.03	58.72	67.65	80.62	90.80
128	62.81	90.12	107.4	123.5	145.3	165.4
512	109.3	156.8	186.9	213.0	248.9	280.7
1024	136.0	192.0	229.4	261.6	308.4	348.9
2048	171.7	241.0	285.4	325.5	386.7	434.4

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 15°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
8	7.08	7.56	7.69	7.78	.....	.....
32	15.47	16.41	16.78	16.91	17.18	16.97
128	28.42	30.16	30.68	30.88	30.96	30.92
512	49.46	52.48	53.40	53.25	53.03	52.47
1024	61.54	64.26	65.54	65.40	65.71	65.23
2048	77.69	80.66	81.54	81.38	82.40	81.21

Dissociation Constants $\times 10^4$.

v	0°	15°	25°	35°	50°	65°
8	6.7	7.7	8.0	8.2	.....	.....
32	8.9	10.1	10.6	10.8	11.1	11.1
128	8.8	10.2	10.6	10.8	10.8	10.8
512	9.5	11.3	12.0	11.8	11.7	11.3
1024	9.6	11.3	12.2	12.1	12.3	11.9
2048	13.2	16.4	17.6	17.4	18.8	17.1

Temperature Coefficients in Conductivity Units.

v	0–15°	15–25°	25–35°	35–50°	50–65°
8	0.46	0.43	0.42	.....	.....
32	0.99	0.97	0.89	0.86	0.68
128	1.89	1.73	1.61	1.45	1.34
512	3.17	3.01	2.61	2.40	2.12
1024	3.73	3.74	3.22	3.12	2.70
2048	4.62	4.44	4.09	4.08	3.18

Temperature Coefficients in Per Cent.

v	0–15°	15–25°	25–35°	35–50°	50–65°
8	2.96	1.93	1.55	.....	.....
32	2.94	1.98	1.52	1.27	0.84
128	3.00	1.92	1.47	1.17	0.92
512	2.90	1.92	1.40	1.13	0.85
1024	2.75	1.95	1.40	1.19	0.88
2048	2.69	1.84	1.40	1.26	0.82

Racemic Acid (Wt. and Sm.).

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 12°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
8	18.02	24.35	30.97	35.98	39.97	44.88
32	34.60	46.85	59.65	69.03	77.91	87.21
128	63.24	85.15	108.2	124.7	141.44	159.40
512	110.6	147.8	187.0	215.1	243.91	271.34
1024	139.0	183.7	230.0	264.3	302.97	336.09
2048	175.3	231.5	290.4	333.8	375.37	414.73

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 12°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
8	8.15	8.51	8.85	9.04	8.53	8.39
32	15.66	16.38	17.04	17.34	16.64	16.30
128	28.62	29.77	30.91	31.32	30.21	29.61
512	50.03	51.68	53.42	54.04	52.09	50.72
1024	62.90	64.22	65.70	66.40	64.7	62.83
2048	79.30	80.93	82.96	83.85	80.2	77.53

Dissociation Constants $\times 10^4$.

v	0°	12°	25°	35°	50°	65°
8	9.1	9.9	10.8	11.2	9.94	9.60
32	9.1	10.0	10.9	11.3	9.96	9.91
128	9.0	9.9	10.8	11.2	10.36	9.63
512	9.8	10.8	12.0	12.4	11.06	10.19
1024	10.4	11.3	12.3	12.3	10.92	10.37
2048	18.8	16.8	19.7	21.3	14.80	13.06

Temperature Coefficients in Conductivity Units.

v	0–12°	12–25°	25–35°	35–50°	50–65°
8	1.53	0.51	0.50	0.27	0.33
32	1.02	0.99	0.95	0.60	0.62
128	1.83	1.77	1.65	1.19	1.20
512	3.10	3.02	2.81	1.92	1.83
1024	3.73	3.56	3.43	2.58	2.21
2048	4.68	4.53	4.34	2.77	2.62

Temperature Coefficients in Per Cent.

v	0–12°	12–25°	25–35°	35–50°	50–65°
8	2.93	2.09	1.62	0.75	0.82
32	2.93	1.10	1.59	0.87	0.80
128	2.89	2.08	1.53	0.95	0.85
512	2.80	2.04	1.50	0.89	0.75
1024	2.68	2.94	1.49	0.98	0.73
2048	2.67	1.95	1.50	0.83	0.70

Thiodiglycolic Acid (Wm.).

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 15°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
8	15.70	21.40	25.00	28.16	32.50	35.68
32	28.86	39.38	46.27	52.18	60.64	66.48
128	52.79	72.42	84.80	96.00	111.0	122.5
512	93.31	127.47	148.93	169.03	194.9*	214.7
1024	119.93	164.00	191.30	216.13	249.8*	278.9
2048	152.20	207.38	242.65	275.70	318.0	355.3

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 15°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
8	7.09	7.13	7.12	7.02	6.90	6.64
32	13.03	13.11	13.17	13.01	12.88	12.37
128	23.83	24.12	24.14	23.94	23.58	22.79
512	42.12	42.45	42.39	42.15	41.40	39.94
1024	54.14	34.61	54.46	53.90	53.06	51.88
2048	68.70	69.06	69.10	68.76	67.54	66.10

Dissociation Constants $\times 10^4$.

v	0°	15°	25°	35°	50°	65°
8	6.77	6.85	6.82	6.63	6.39	5.90
32	6.10	6.18	6.24	6.08	5.95	5.46
128	5.83	5.99	6.00	5.89	5.68	5.26
512	5.99	6.11	6.09	6.00	5.71	5.19
1024	6.24	6.33	6.36	6.16	5.86	4.52
2048	7.36	7.53	7.54	7.39	6.86	6.29

Temperature Coefficients in Conductivity Units.

v	0–15°	15–25°	25–35°	35–50°	50–65°
8	0.38	0.36	0.32	0.29	0.21
32	0.70	0.69	0.59	0.57	0.39
128	1.31	1.24	1.12	1.00	0.77
512	2.28	2.15	2.01	1.67	1.32
1024	2.94	2.73	2.48	2.24	1.94
2048	3.68	2.53	3.31	2.82	2.49

Temperature Coefficients in Per Cent.

v	0–15°	15–25°	25–35°	35–50°	50–65°
8	2.42	1.68	1.26	1.03	0.65
32	2.43	1.75	1.28	1.09	0.64
128	2.48	1.71	1.32	1.04	0.69
512	2.44	1.68	1.35	0.99	0.68
1024	2.45	1.67	1.30	1.04	0.78
2048	2.42	1.70	1.36	1.03	0.78

*Interpolated values.

Tricarballylic Acid (Wm.).

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 15°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
8	8.26	11.73	14.05	16.24	19.29	22.09
32	16.39	23.41	28.02	32.38	37.97	42.97
128	31.82	45.13	53.98	62.28	73.72	82.46
512	59.35	83.65	99.99	115.38	135.70	150.20
1024	78.79	110.53	131.67	152.40	180.20	203.10
2048	103.03	143.90	170.85	196.65	230.80	261.60

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 15°$		$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
		From graph.	From * equation.				
8	3.76	3.95	3.95	4.04	4.09	4.12	4.13
32	7.45	7.89	7.88	8.07	8.16	8.11	8.03
128	14.47	15.21	15.18	15.53	15.69	15.75	15.41
512	26.99	28.19	28.14	28.77	29.06	29.00	28.07
1024	35.83	37.25	37.18	37.88	38.39	38.50	37.96
2048	46.85	48.49	48.41	49.15	49.54	49.31	48.90

Dissociation Constants $\times 10^4$.

v	0°	15°		25°	35°	50°	65°
		From graph.	From equation.				
8	1.84	2.03	2.03	2.13	2.18	2.21	2.22
32	1.87	2.11	2.11	2.21	2.27	2.24	2.19
128	1.91	2.13	2.12	2.23	2.28	2.30	2.19
512	1.95	2.16	2.15	2.27	2.33	2.31	2.14
1024	1.95	2.16	2.15	2.25	2.34	2.35	2.27
2048	2.02	2.25	2.22	2.32	2.38	2.30	2.28

Temperature Coefficients in Conductivity Units.

v	0–15°	15–25°	25–35°	35–50°	50–65°
8	0.23	0.23	0.22	0.20	0.19
32	0.47	0.46	0.44	0.35	0.33
128	0.89	0.88	0.83	0.76	0.58
512	1.63	1.63	1.54	1.35	0.97
1024	2.12	2.11	2.06	1.85	1.22
2048	2.73	2.70	2.58	2.28	2.05

Temperature Coefficients in Per Cent.

v	0–15°	15–25°	25–35°	35–50°	50–65°
8	2.79	1.97	1.55	1.23	0.97
32	2.86	1.97	1.56	1.08	0.88
128	2.79	1.96	1.54	1.22	0.79
512	2.74	1.95	1.54	1.17	0.71
1024	2.68	1.91	1.57	1.21	0.68
2048	2.65	1.87	1.51	1.16	0.89

Cyanuric Acid (Wm.).

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 15°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
128	.....	.....	.....	1.46	.....	.....
512	.....	.....	.....	2.78	.....	.....
1024	.....	.....	.....	3.52	.....	.....
2048	.....	.....	.....	4.67	.....	.....

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 15°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
128	.....	.....	.....	0.36	.....	.....
512	.....	.....	.....	0.69	.....	.....
1024	.....	.....	.....	0.87	.....	.....
2048	.....	.....	.....	1.15	.....	.....

Dissociation Constants $\times 10^4$.

v	0°	15°	25°	35°	50°	65°
8	.....	.....	.....	.....	.....	.....
32	.....	.....	.....	.....	.....	.....
128	.....	.....	.....	.....	.....	.....
512	.....	.....	.....	.....	.....	.....
1024	.....	.....	.....	.....	.....	.....
2048	.....	.....	.....	.....	.....	.....

Temperature Coefficients in Conductivity Units.

v	0–15°	15–25°	25–35°	35–50°	50–65°
8	.....	.....	.....	.....	.....
32	.....	.....	.....	.....	.....
128	.....	.....	.....	.....	.....
512	.....	.....	.....	.....	.....
1024	.....	.....	.....	.....	.....
2048	.....	.....	.....	.....	.....

Temperature Coefficients in Per Cent.

v	0–15°	15–25°	25–35°	35–50°	50–65°
8	.....	.....	.....	.....	.....
32	.....	.....	.....	.....	.....
128	.....	.....	.....	.....	.....
512	.....	.....	.....	.....	.....
1024	.....	.....	.....	.....	.....
2048	.....	.....	.....	.....	.....

*$K_{15} = \left[219.9 \times (5.22 \times 15) - (0.00438 \times 225)\right] = 297.2$.

Benzilic or Diphenylglycolic Acid (Wm.).

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 12°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
128	63.8	81.7	101.5	114.3	.....	.....
512	106.4	138.3	169.5	192.4	220.6	240.0
1024	133.6	169.8	208.4	237.1	266.5	293.0
2048	152.3	193.0	233.7	281.4	320.8	348.5

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 12°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
128	29.17	29.08	29.45	29.27	.....	.....
512	48.64	49.24	48.60	47.57	48.01	46.24
1024	61.08	60.44	60.46	60.20	58.11	56.36
2048	69.63	68.71	67.81	64.82	69.95	67.03

Dissociation Constants $\times 10^4$.

v	0°	12°	25°	35°	50°	65°
128	9.38	9.10	9.60	9.46	.....	.....
512	9.00	9.32	8.97	8.43	8.66	7.77
1024	9.36	9.02	9.02	8.89	7.87	7.09
2048	7.80	7.37	6.97	5.83	7.95	6.65

Temperature Coefficients in Conductivity Units.

v	0–12°	12–25°	25–35°	35–50°	50–65°
128	1.52	1.50	1.28	.....	.....
512	2.66	2.24	2.29	1.88	1.29
1024	3.02	2.97	2.87	1.96	1.77
2048	3.39	3.13	.....	2.63	1.85

Temperature Coefficients in Per Cent.

v	0–12°	12–25°	25–35°	35–50°	50–65°
128	2.38	1.84	1.26	.....	.....
512	2.50	1.62	1.35	0.98	0.58
1024	2.26	1.75	1.23	0.83	0.66
2048	2.23	1.62	.....	0.93	0.58

Hippuric Acid (Wt. and Sm.).

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 12°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
128	33.96	44.42	55.17	62.15	70.76	77.97
512	61.66	80.54	100.2	113.5	131.23	184.77
1024	81.10	105.8	131.1	147.2	169.15	186.18
2048	103.0	134.1	165.8	185.9	219.90	242.15

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 12°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
128	15.51	15.86	15.99	15.85	15.85	15.60
512	28.16	28.76	29.04	28.96	29.38	28.97
1024	37.03	37.79	38.00	37.55	37.87	37.25
2048	47.03	47.88	48.06	47.42	49.24	48.45

Dissociation Constants $\times 10^4$.

v	0°	12°	25°	35°	50°	65°
128	2.22	2.34	2.38	2.33	2.33	2.25
512	2.16	2.27	2.32	2.31	2.38	2.30
1024	2.13	2.24	2.28	2.26	2.25	2.16
2048	2.04	2.15	2.17	2.09	2.33	2.23

Temperature Coefficients in Conductivity Units.

v	0–12°	12–25°	25–35°	35–50°	50–65°
128	0.87	0.83	0.70	0.57	0.48
512	1.57	1.52	1.25	1.18	0.90
1024	2.06	1.95	1.61	1.46	1.13
2048	2.59	2.44	2.01	2.27	1.48

Temperature Coefficients in Per Cent.

v	0–12°	12–25°	25–35°	35–50°	50–65°
128	2.57	1.86	1.27	0.92	0.67
512	2.55	1.84	1.25	1.04	0.68
1024	2.54	1.84	1.23	0.99	0.66
2048	2.52	1.82	1.21	1.22	0.67

Uric Acid (Wm.).

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 15°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
8	.....	.....	.....	.....	.....	.....
32	.....	.....	.....	.....	.....	.....
128	.....	.....	.....	.....	.....	.....
512	.....	.....	.....	.....	.....	.....
1024	.....	.....	.....	.....	.....	.....
2048	8.34	14.85	18.92	22.77	.....	.....

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 15°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
8	.....	.....	.....	.....	.....	.....
32	.....	.....	.....	.....	.....	.....
128	.....	.....	.....	.....	.....	.....
512	.....	.....	.....	.....	.....	.....
1024	.....	.....	.....	.....	.....	.....
2048	3.77	4.97	5.41	5.71	*	*

Dissociation Constants $\times 10^4$.

v	0°	15°	25°	35°	50°	65°
8	.....	.....	.....	.....	.....	.....
32	.....	.....	.....	.....	.....	.....
128	.....	.....	.....	.....	.....	.....
512	.....	.....	.....	.....	.....	.....
1024	.....	.....	.....	.....	.....	.....
2048	0.0072	0.0127	0.0151	0.0069	.....	.....

Temperature Coefficients in Conductivity Units.

v	0–15°	15–25°	25–35°	35–50°	50–65°
8	.....	.....	.....	.....	.....
32	.....	.....	.....	.....	.....
128	.....	.....	.....	.....	.....
512	.....	.....	.....	.....	.....
1024	.....	.....	.....	.....	.....
2048	0.43	0.40	0.38	.....	.....

Temperature Coefficients in Per Cent.

v	0–15°	15–25°	25–35°	35–50°	50–65°
8	.....	.....	.....	.....	.....
32	.....	.....	.....	.....	.....
128	.....	.....	.....	.....	.....
512	.....	.....	.....	.....	.....
1024	.....	.....	.....	.....	.....
2048	5.20	2.72	2.03	.....	.....

Citric Acid (Wt. and Sm.).

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 18.1°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
8	15.64	24.34	27.50	32.05	37.91	43.77
32	30.27	46.74	52.76	61.42	75.80	86.99
128	55.94	86.40	97.30	112.7	136.44	155.61
512	97.22	148.3	167.6	195.1	234.37	267.22
1024	127.3	193.3	218.1	251.9	305.21	338.70
2048	153.2	229.3	257.9	297.8	357.77	410.66

Percentage Dissociation.

v	$\alpha 10°$	$\alpha 18.1°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
8	7.14	7.82	7.97	8.18	8.16	8.28
32	13.82	15.03	15.30	15.67	16.31	16.46
128	25.55	27.77	28.20	28.74	29.37	29.44
512	44.40	47.46	48.59	49.76	50.45	50.56
1024	58.13	62.16	63.23	64.25	65.70	64.08
2048	69.97	73.72	74.74	75.98	77.02	77.70

Dissociation Constants $\times 10^4$.

v	0°	18.1°	25°	35°	50°	65°
8	6.87	8.30	8.63	9.10	9.06	9.34
32	6.92	8.30	8.63	9.10	9.93	10.13
128	6.85	8.34	8.66	9.05	9.55	9.59
512	6.92	8.38	8.97	9.63	10.36	10.09
1024	7.88	9.96	10.6	11.3	12.28	11.16
2048	7.96	10.1	10.8	11.7	12.60	13.21

Temperature Coefficients in Conductivity Units.

v	0–18.1°	18.1–25°	25–35°	35–50°	50–65°
8	0.48	0.46	0.46	0.39	0.39
32	0.91	0.87	0.87	0.96	0.75
128	1.68	1.58	1.54	1.58	1.28
512	2.82	2.80	2.66	2.62	3.28
1024	3.64	3.59	3.38	3.55	4.35
2048	4.20	4.15	3.99	3.99	5.29

Temperature Coefficients in Per Cent.

v	0–18.1°	18.1–25°	25–35°	35–50°	50–65°
8	3.07	1.88	1.66	1.22	1.02
32	3.00	1.87	1.64	1.56	0.98
128	3.01	1.83	1.58	1.40	0.93
512	2.90	1.87	1.58	1.34	0.93
1024	2.86	1.86	1.55	1.41	0.95
2048	2.75	1.81	1.55	1.34	0.98

*Decomposes at higher temperatures.

Pyromucic Acid (Wt. and Sp.).

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 12°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
8	17.47	22.01	26.29	28.94	31.59	33.36
32	34.24	42.76	51.15	56.37	62.36	66.56
128	62.90	79.22	94.61	104.5	116.32	124.38
512	107.1	136.4	163.2	180.0	199.9	213.8
1024	132.0	169.0	201.0	222.9	249.2	265.3
2048	159.5	203.0	245.1	270.1	308.9	333.9

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 12°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
8	7.83	7.64	7.38	7.15	6.71	6.19
32	15.36	14.85	14.41	13.92	13.24	12.34
128	28.21	27.51	26.65	25.80	24.69	23.07
512	48.03	47.36	45.97	44.44	42.44	39.65
1024	59.20	58.68	56.99	55.03	52.91	49.20
2048	71.53	70.49	69.05	66.70	65.58	61.93

Dissociation Constants $\times 10^4$.

v	0°	12°	25°	35°	50°	65°
8	8.3	7.9	7.4	6.9	6.0	5.1
32	8.7	8.1	7.6	7.0	6.3	5.4
128	8.7	8.1	7.6	7.0	6.3	5.4
512	8.7	8.3	7.6	6.9	6.1	5.1
1024	8.4	8.1	7.4	6.6	5.8	4.8
2048	8.7	8.2	7.5	6.5	6.1	4.9

Temperature Coefficients in Conductivity Units.

v	0–12°	12–25°	25–35°	35–50°	50–65°
8	0.38	0.33	0.28	0.18	0.12
32	0.71	0.65	0.52	0.40	0.28
128	1.36	1.18	0.99	0.79	0.54
512	2.44	2.06	1.68	1.46	0.93
1024	3.08	2.49	2.06	1.75	1.07
2048	3.62	3.24	2.50	2.59	1.67

Temperature Coefficients in Per Cent.

v	0–12°	12–25°	25–35°	35–50°	50–65°
8	2.18	1.50	1.05	0.62	0.37
32	2.08	1.61	1.04	0.71	0.45
128	2.16	1.50	1.05	0.76	0.46
512	2.28	1.51	1.03	0.82	0.46
1024	2.31	1.47	1.02	0.79	0.43
2048	2.27	1.59	1.02	0.96	.....

Crotonic Acid (Wt. and Sm.).

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 12°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
8	2.75	3.64	4.55	5.18	5.92	6.56
32	5.53	7.31	9.12	10.31	11.90	13.13
128	10.92	14.49	18.00	20.29	23.88	26.20
512	21.25	28.23	35.15	39.85	46.54	51.73
1024	29.14	38.50	48.04	54.60	62.67	69.54
2048	39.78	53.41	65.33	74.19	88.44	98.12

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 12°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
8	1.24	1.27	1.29	1.29	1.24	1.21
32	2.49	2.56	2.59	2.57	2.50	2.41
128	4.92	5.07	5.11	5.05	5.02	4.82
512	9.57	9.87	10.00	9.91	9.79	9.51
2048	13.12	13.46	13.65	13.58	13.19	12.78
2048	17.74	18.32	18.57	18.45	18.60	18.03

Dissociation Constants $\times 10^4$.

v	0°	12°	25°	35°	50°	65°
8	0.195	0.205	0.212	0.211	0.195	0.185
32	0.199	0.210	0.215	0.211	0.200	0.185
128	0.199	0.211	0.215	0.210	0.209	0.190
512	0.198	0.211	0.216	0.213	0.205	0.193
1024	0.194	0.205	0.211	0.208	0.195	0.182
2048	0.187	0.201	0.207	0.204	0.207	0.193

Temperature Coefficients in Conductivity Units.

v	0–12°	12–25°	25–35°	35–50°	50–65°
8	0.07	0.07	0.06	0.05	0.043
32	0.15	0.14	0.12	0.11	0.082
128	0.30	0.27	0.23	0.24	0.15
512	0.58	0.53	0.47	0.45	0.35
1024	0.78	0.73	0.66	0.54	0.46
2048	1.05	0.99	0.89	0.95	0.64

Temperature Coefficients in Per Cent.

v	0–12°	12–35°	25–35°	35–50°	50–65°
8	2.69	1.92	1.38	0.97	0.72
2	2.69	1.91	1.31	1.07	0.68
128	2.72	1.86	1.27	1.18	0.64
512	2.74	1.89	1.34	1.13	0.74
1024	2.68	1.91	1.37	0.99	0.73
2048	2.67	1.90	1.36	1.28	0.72

Maleic Acid (Wt. and Sm.).

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 12°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
32	108.1	141.0	175.4	198.8	230.35	257.29
128	159.2	206.6	256.2	290.7	338.46	378.51
512	198.5	257.4	317.6	360.8	422.18	477.78
1024	212.8	274.7	337.9	384.6	451.57	514.57
2048	221.1	286.6	352.3	400.8	457.98	522.22

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 12°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
32	48.48	48.78	49.72	49.46	48.49	47.29
128	71.50	71.50	72.56	72.31	71.25	69.57
512	89.00	89.06	89.97	89.76	88.88	87.82
1024	95.06	95.06	95.72	95.68	95.06	94.59
2048	99.10	99.17	99.79	99.72	96.41	95.99

Dissociation Constants $\times 10^4$.

v	0°	12°	25°	35°	50°	65°
32	143.0	145.0	154.0	151.0	142.6	106.0
128	141.0	140.0	150.0	148.0	137.8	124.2
512	141.0	142.0	158.0	154.0	138.7	123.6
1024	179.0	179.0	209.0	208.0	178.6	161.5
2048	.....	.....	.....	.....	126.4	112.1

Temperature Coefficients in Conductivity Units.

v	0–12°	12–25°	25–35°	35–50°	50–65°
32	2.74	2.65	2.34	2.10	1.80
128	3.95	3.82	3.45	3.18	2.67
512	4.85	4.63	4.32	4.09	3.70
1024	5.14	4.86	4.67	4.46	4.20
2048	5.46	5.05	4.85	3.81	4.28

Temperature Coefficients in Per Cent.

v	0–12°	12–25°	25–35°	35–50°	50–65°
32	2.54	1.88	1.34	1.05	0.78
128	2.48	1.85	1.35	1.09	0.78
512	2.50	1.80	1.36	1.14	0.87
1024	2.43	1.77	1.38	1.16	0.93
2048	2.47	1.76	1.41	0.95	0.93

Fumaric Acid (Wt. and Sm.).

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 12°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
32	35.46	46.66	58.00	65.79	75.19	82.75
128	65.67	86.42	107.2	121.2	137.88	152.14
512	114.1	149.1	184.9	209.6	237.9	262.94
1024	141.4	184.9	228.1	258.1	294.2	325.09
2048	176.5	229.0	281.0	318.1	361.4	396.63

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 12°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
32	15.90	16.14	16.43	16.37	15.83	15.21
128	29.45	29.90	30.37	30.15	29.02	27.96
512	51.17	51.59	52.37	52.14	50.08	48.33
1024	63.43	63.97	64.62	64.21	61.93	59.75
2048	79.14	79.23	79.60	79.12	76.08	72.91

Dissociation Constants $\times 10^4$.

v	0°	12°	25°	35°	50°	65°
32	9.40	9.72	10.1	10.0	9.3	8.5
128	9.61	9.97	10.4	10.2	9.3	8.5
512	10.5	10.7	11.3	11.0	9.2	8.8
1024	10.7	11.1	11.5	11.2	9.8	8.6
2048	14.7	14.8	15.2	14.6	11.8	9.5

Temperature Coefficients in Conductivity Units.

v	0–12°	12–25°	25–35°	35–50°	50–65°
32	0.94	0.87	1.78	0.63	0.50
128	1.73	1.60	1.46	1.11	0.95
512	2.92	2.75	2.47	1.89	1.70
1024	3.62	3.32	3.00	2.41	2.05
2048	4.33	4.00	3.71	2.89	2.34

Temperature Coefficients in Per Cent.

v	0–12°	12–25°	25–35°	35–50°	50–65°
32	2.64	1.87	1.19	0.96	0.67
128	2.63	1.85	1.20	0.92	0.68
512	2.56	1.85	1.18	0.90	0.69
1024	2.56	1.80	1.17	0.93	0.70
2048	2.45	1.75	1.17	0.91	0.65

Itaconic Acid (Wt. and Sm.).

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 18.12°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
32	13.50	20.77	23.68	27.22	32.25	36.60
128	26.00	39.95	45.52	52.21	62.17	70.76
512	49.51	74.57	84.74	97.11	116.70	132.59
1024	66.70	99.51	113.3	129.8	153.97	175.02
2048	87.91	129.9	147.3	167.5	200.02	227.02

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 18.12°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
32	6.10	6.57	6.75	6.80	6.84	6.81
128	11.75	12.64	12.97	13.05	13.19	13.16
512	22.38	23.60	24.15	24.28	24.77	24.64
1024	30.14	31.49	32.28	32.45	32.68	32.55
2048	39.72	41.11	41.98	41.87	42.46	42.23

Dissociation Constants $\times 10^4$.

v	0°	18.12°	25°	35°	50°	65°
32	1.24	1.45	1.53	1.55	1.57	1.55
128	1.23	1.43	1.51	1.53	1.56	1.55
512	1.26	1.43	1.50	1.52	1.59	1.57
1024	1.27	1.42	1.50	1.52	1.54	1.53
2048	1.28	1.40	1.49	1.47	1.52	1.50

Temperature Coefficients in Conductivity Units.

v	0–18.12°	18.12–25°	25–35°	35–50°	50–65°
32	0.40	0.42	0.35	0.33	0.29
128	0.77	0.83	0.67	0.66	0.57
512	1.38	1.48	1.24	1.31	1.06
1024	1.81	2.01	1.65	1.61	1.40
2048	2.32	2.53	2.02	2.17	1.80

Temperature Coefficients in Per Cent.

v	0–18.12°	18.12–25°	25–35°	35–50°	50–65°
32	2.97	2.04	1.50	1.21	0.90
128	2.97	2.03	1.47	1.27	0.92
512	2.79	1.98	1.46	1.35	0.90
1024	2.71	2.01	1.45	1.24	0.91
2048	2.64	1.95	1.44	1.30	0.90

Citraconic Acid (Wt. and Sm.).

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 12°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
32	68.66	85.82	103.0	115.1	129.33	142.98
128	114.3	144.0	173.4	194.4	222.88	248.18
512	165.9	210.2	255.4	288.2	331.96	377.09
1024	186.1	273.0	289.1	326.5	382.98	431.52
2048	200.5	257.1	315.0	356.0	417.68	475.08

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 12°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
32	31.02	30.16	29.34	28.77	27.45	26.60
128	51.64	50.60	49.40	48.60	47.32	46.17
512	74.98	73.86	72.76	72.04	70.48	70.15
1024	84.09	83.28	82.37	81.62	81.31	80.28
2048	90.59	90.31	89.74	89.01	88.67	88.38

Dissociation Constants $\times 10^4$.

v	0°	12°	25°	35°	50°	65°
32	43.6	40.7	38.1	36.3	32.45	30.12
128	43.1	40.5	37.7	35.9	33.20	30.93
512	43.9	40.8	38.0	36.2	32.86	32.19
1024	43.4	40.5	37.6	35.4	32.79	31.91
2048	42.6	41.0	38.3	35.3	33.88	32.82

Temperature Coefficients in Conductivity Units.

v	0–12°	12–25°	25–35°	35–50°	50–65°
32	1.43	1.32	1.21	0.95	0.91
128	2.48	2.26	2.10	1.90	1.69
512	3.69	3.48	3.28	2.92	3.01
1024	4.24	4.00	3.74	3.77	3.24
2048	4.70	4.46	4.10	4.11	3.83

Temperature Coefficients in Per Cent.

v	0–12°	12–25°	25–35°	35–50°	50–65°
32	2.08	1.54	1.18	0.83	0.70
128	2.17	1.57	1.21	0.97	0.75
512	2.23	1.65	1.28	1.02	0.90
1024	2.28	1.69	1.29	1.15	0.84
2048	2.34	1.74	1.30	1.15	0.91

Mesaconic Acid (Wt. and Sm.).

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 12°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
32	33.31	42.85	52.00	58.04	65.94	72.66
128	62.60	80.18	97.30	108.5	123.0	135.5
512	108.0	139.0	168.5	188.2	214.1	235.3
1024	134.7	172.9	209.8	234.0	266.1	293.35
2048	160.9	206.3	250.0	278.8	318.3	352.7

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 12°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
32	15.05	15.04	14.81	14.51	13.99	13.51
128	28.29	28.17	27.72	27.13	26.11	25.20
512	48.79	48.67	48.00	47.06	45.45	43.77
1024	60.87	60.74	59.77	58.49	56.49	54.57
2048	72.69	72.49	71.22	69.69	67.57	65.61

Dissociation Constants $\times 10^4$.

v	0°	12°	25°	35°	50°	65°
32	8.4	8.4	8.1	7.7	6.6	6.6
128	8.7	8.6	8.3	7.9	7.2	6.6
512	9.1	9.0	8.6	8.2	7.3	6.6
1024	9.3	9.2	8.7	8.1	7.1	6.4
2048	9.5	9.3	8.6	9.8	6.9	6.1

Temperature Coefficients in Conductivity Units.

v	0–12°	12–25°	25–35°	35–50°	50–65°
32	0.80	0.70	0.60	0.53	0.41
128	1.47	1.32	1.12	0.97	0.83
512	2.54	2.27	1.97	1.71	1.41
1024	3.78	2.84	2.42	2.14	1.86
2048	4.09	3.36	2.88	2.63	2.29

Temperature Coefficients in Per Cent.

v	0–12°	12–25°	25–35°	35–50°	50–65°
32	2.39	1.63	1.16	0.91	0.67
128	2.36	1.64	1.15	0.90	0.68
512	2.35	1.63	1.16	0.91	0.66
1024	2.37	1.64	1.15	0.92	0.68
2048	2.35	1.63	1.15	0.94	0.72

Phenylpropiolic Acid (Sp.).

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 15°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
128	132.61	176.99	203.33	227.25	255.63	274.68
256	154.79	207.96	239.19	267.59	301.25	327.39
512	176.08	236.63	274.45	307.85	349.73	375.33
1024	191.44	258.04	299.84	339.21	392.11	422.15
2048	200.55	269.00	314.8	357.91	416.56	449.56

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 15°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
128	59.67	58.91	57.87	56.82	54.39	50.98
256	69.66	69.22	68.08	66.90	64.09	60.76
512	79.24	78.76	78.12	76.97	74.41	69.66
1024	86.15	85.89	85.34	84.81	83.43	78.35
2048	90.25	89.54	89.60	89.48	88.63	83.43

Dissociation Constants $\times 10^4$.

v	0°	15°	25°	35°	50°	65°
128	68.9	66.0	62.1	58.4	50.7	41.4
256	62.5	60.8	56.7	52.8	44.7	36.8
512	59.1	57.0	54.5	50.2	42.3	31.2
1024	52.3	51.1	48.5	46.2	41.0	27.7
2048	40.8	37.4	37.7	37.2	33.7	20.5

Temperature Coefficients in Conductivity Units.

v	0–15°	15–25°	25–35°	35–50°	50–65°
128	2.96	2.63	2.39	1.89	1.27
256	3.54	3.12	2.84	2.24	1.53
512	4.05	3.78	3.34	2.77	1.71
1024	4.44	4.08	3.94	3.53	2.09
2048	4.65	4.58	4.31	3.91	2.20

Temperature Coefficients in Per Cent.

v	0–15°	15–25°	25–35°	35–50°	50–65°
128	2.23	1.48	1.17	0.83	0.50
256	2.24	1.50	1.18	0.84	0.51
512	2.25	1.59	1.21	0.90	0.49
1024	2.32	1.61	1.31	1.04	0.51
2048	2.27	1.70	1.36	1.09	0.53

Meconic Acid (Wm.).

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 15°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
32	.....	358.6	412.8	461.5	524.4	574.2
128	347.8	463.2	536.4	598.9	684.7	754.9
512	412.8	553.6	645.4	729.5	839.2	940.8
1024	435.9	586.8	686.2	778.0	899.0	1027.8
2048	442.1	597.3	700.1	802.7	945.0	1081.2

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 15°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
32	.....	.....	.....	.....	.....	.....
128	.....	.....	.....	.....	.....	.....
512	.....	.....	.....	.....	.....	.....
1024	.....	.....	.....	.....	.....	.....
2048	.....	.....	.....	.....	.....	.....

Dissociation Constants $\times 10^4$.

v	0°	15°	25°	35°	50°	65°
32	.....	.....	.....	.....	.....	.....
128	.....	.....	.....	.....	.....	.....
512	.....	.....	.....	.....	.....	.....
1024	.....	.....	.....	.....	.....	.....
2048	.....	.....	.....	.....	.....	.....

Temperature Coefficients in Conductivity Units.

v	0–15°	15–25°	25–35°	35–50°	50–65°
32	.....	5.42	4.86	4.19	3.32
128	7.69	7.32	6.25	5.72	4.68
512	9.39	9.18	8.41	7.31	6.77
1024	10.06	9.94	9.18	8.07	8.59
2048	10.35	10.28	10.26	9.49	9.08

Temperature Coefficients in Per Cent.

v	0–15°	15–25°	25–35°	35–50°	50–65°
32	.....	1.58	1.18	0.91	0.63
128	2.21	1.44	1.17	0.94	0.68
512	2.27	1.65	1.33	1.00	0.80
1024	2.36	1.69	1.34	1.04	0.96
2048	2.34	1.72	1.47	1.18	0.96

Benzoic Acid (Wt. and C.).

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 15.8°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
64	13.42	19.08	22.29	25.40	29.46	32.21
128	18.49	26.93	31.39	35.71	40.81	45.56
512	36.00	51.30	59.79	67.81	77.63	82.90
1024	47.63	68.33	79.56	90.11	103.4	113.5
2048	64.95	91.30	106.0	119.7	135.6	148.2

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 15.8°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
64	6.04	6.32	6.35	6.34	6.26	5.99
128	8.46	8.92	8.94	8.92	8.66	8.48
512	16.21	17.00	17.02	16.94	16.48	15.42
1024	21.45	22.62	22.67	22.52	21.95	21.12
2048	29.25	30.24	30.20	29.92	28.79	27.57

Dissociation Constants $\times 10^4$.

v	0°	15.8°	25°	35°	50°	65°
64	0.607	0.666	0.672	0.672	0.653	0.596
128	0.611	0.682	0.686	0.684	0.641	0.614
512	0.613	0.679	0.683	0.676	0.635	0.549
1024	0.572	0.646	0.649	0.640	0.603	0.552
2048	0.591	0.640	0.638	0.624	0.569	0.513

Temperature Coefficients in Conductivity Units.

v	0–15.8°	15.8–25°	25–35°	35–50°	50–65°
64	0.36	0.35	0.31	0.27	0.18
128	0.50	0.49	0.43	0.34	0.32
512	0.97	0.92	0.80	0.65	0.35
1024	1.26	1.22	1.06	0.89	0.67
2048	1.67	1.60	1.37	1.06	0.84

Temperature Coefficients in Per Cent.

v	0–15.8°	15.8–25°	25–35°	35–50°	50–65°
64	2.67	1.83	1.40	1.07	0.62
128	2.66	1.81	1.38	0.95	0.78
512	2.64	1.81	1.35	0.96	0.45
1024	2.64	1.79	1.35	0.99	0.65
2048	2.57	1.75	1.30	0.88	0.62

o-Chlorbenzoic Acid (Wm.).

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 15°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
128	85.20	107.08	118.91	128.39	138.4	143.1
256	109.00	138.40	154.12	167.12	182.3	189.3
512	134.81	172.70	194.05	211.86	231.8	240.1
1024	158.72	205.64	232.91	256.43	281.9	298.8
2048	178.00	233.29	266.52	296.94	329.2	350.5

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 15°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
128	38.66	35.94	34.12	32.32	29.56	28.70
256	49.45	46.45	44.22	42.06	38.95	37.97
512	61.16	57.96	55.67	53.33	49.53	48.16
1024	72.00	69.01	66.82	64.54	60.23	59.94
2048	80.76	78.29	76.46	74.74	70.34	70.31

Dissociation Constants $\times 10^4$.

v	0°	15°	25°	35°	50°	65°
128	19.0	15.8	13.8	12.1	9.7	9.0
256	18.9	15.7	13.7	11.9	9.7	9.1
512	18.8	15.6	13.7	11.9	9.5	8.7
1024	18.1	15.0	13.1	11.5	8.9	8.8
2048	16.6	13.8	12.1	10.8	8.2	8.2

Temperature Coefficients in Conductivity Units.

v	0–15°	15–25°	25–35°	35–50°	50–65°
128	1.46	1.18	0.95	0.67	0.31
256	1.96	1.57	1.30	1.01	0.47
512	2.52	2.13	1.78	1.33	0.55
1024	3.13	2.73	2.35	1.70	1.13
2048	3.68	3.32	3.04	2.15	1.42

Temperature Coefficients in Per Cent.

v	0–15°	15–25°	25–35°	35–50°	50–65°
128	1.71	1.11	0.80	0.52	0.23
526	1.80	1.14	0.84	0.60	0.26
512	1.87	1.24	0.92	0.63	0.24
1024	1.97	1.33	1.01	0.66	0.40
2048	2.07	1.42	1.14	0.73	0.43

o-Nitrobenzoic Acid (J. and Kr.).

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 15°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
32	98.15	120.5	132.2	140.6	144.9	147.2
128	146.9	184.9	205.6	222.6	240.8	249.9
512	187.5	244.1	278.3	307.8	345.9	370.6
1024	196.3	261.7	301.8	336.9	393.5	426.8
2048	200.8	267.4	312.2	351.8	425.9	474.4

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 15°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
32	43.1	39.6	37.2	35.2	30.91	27.53
128	64.4	60.8	57.9	55.7	51.36	46.74
512	82.2	80.3	78.4	77.0	73.78	69.31
1024	86.1	86.1	85.0	84.2	83.94	79.82
2048	88.1	88.0	88.0	88.0	90.86	88.72

Dissociation Constants $\times 10^4$.

v	0°	15°	25°	35°	50°	65°
32	102.0	81.1	68.9	59.7	43.2	32.7
128	91.0	73.6	62.2	54.7	42.4	32.1
512	74.0	63.9	55.6	50.3	32.2	30.6
1024	52.0	52.0	47.0	43.7	42.8	30.8
2048	32.0	34.4	34.4	34.4	55.2	34.1

Temperature Coefficients in Conductivity Units.

v	0–15°	15–25°	25–35°	35–50°	50–65°
32	1.49	1.17	0.84	0.29	0.153
128	2.53	2.07	1.70	1.21	0.606
512	3.77	3.42	2.95	2.54	1.65
1024	4.36	4.01	3.51	3.77	3.22
2048	4.44	4.48	3.96	4.94	3.23

Temperature Coefficients in Per Cent.

v	0–15°	15–25°	25–35°	35–50°	50–65°
32	1.52	0.97	0.59	0.20	0.11
128	1.72	1.12	0.76	0.54	0.25
512	2.61	1.40	1.06	0.83	0.48
1024	2.22	1.53	1.16	1.12	0.55
2048	2.21	1.68	1.27	1.40	0.75

m-Nitrobenzoic Acid (J. and Kr.).

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 15°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
128	40.10	56.85	67.66	77.56	89.9	99.9
512	71.95	101.0	120.0	137.1	160.1	177.9
1024	92.44	129.8	153.8	175.4	210.7	235.9
2048	115.1	160.7	190.5	216.7	262.9	295.7

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 15°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
128	18.7	19.0	19.1	19.2	19.1	18.7
512	33.6	33.8	33.8	33.9	34.1	33.2
1024	43.1	43.4	43.3	43.4	44.9	44.0
2048	53.7	53.8	53.7	53.6	56.0	55.2

Dissociation Constants $\times 10^4$.

v	0°	15°	25°	35°	50°	65°
128	3.36	3.48	3.52	3.57	3.54	3.34
512	3.38	3.37	3.37	3.40	3.44	3.23
1024	3.19	3.25	3.23	3.25	3.57	3.38
2048	3.04	3.06	3.04	3.02	3.48	3.33

Temperature Coefficients in Conductivity Units.

v	0–15°	15–25°	25–35°	35–50°	50–65°
128	1.12	1.08	0.99	0.82	0.67
512	1.87	1.90	1.71	1.53	1.19
1024	2.49	2.40	2.16	2.35	1.67
2048	3.04	2.98	2.62	3.08	2.19

Temperature Coefficients in Per Cent.

v	0–15°	15–25°	25–35°	35–50°	50–65°
128	2.79	1.90	1.46	1.06	0.74
512	2.60	1.88	1.43	1.12	0.74
1024	2.69	1.85	1.40	1.34	0.78
2048	2.64	1.85	1.38	1.42	0.83

p-Nitrobenzoic Acid (Wm.).

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 12°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
512	79.1	104.0	128.9	148.3	170.6	187.9
1024	99.9	131.5	163.4	187.4	218.7	238.6
2048	126.8	165.9	205.4	235.4	275.2	304.2

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 12°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
512	35.59	36.55	36.86	37.12	36.45	35.18
1024	44.93	46.20	46.73	46.86	46.73	44.76
2048	55.47	58.30	58.73	58.87	58.80	57.07

Dissociation Constants $\times 10^4$.

v	0°	12°	25°	35°	50°	65°
512	3.84	4.11	4.30	4.28	4.08	3.52
1024	3.58	3.87	4.00	4.03	4.00	3.54
2048	3.43	3.98	4.08	4.11	4.09	3.70

Temperature Coefficients in Conductivity Units.

v	0–12°	12–25°	25–35°	35–50°	50–65°
512	2.08	1.92	1.95	1.49	1.15
1024	2.63	2.46	2.40	2.09	1.33
2048	3.26	3.04	3.00	2.65	1.93

Temperature Coefficients in Per Cent.

v	0–12°	12–25°	25–35°	35–50°	50–65°
512	2.63	1.85	1.51	1.00	0.67
1024	2.63	1.87	1.47	1.12	0.61
2048	2.57	1.83	1.46	1.13	0.70

1, 2, 4-Dinitrobenzoic Acid (Wm.).

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 15°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
32	166.51	212.12	238.54	260.00	284.5	301.6
128	199.23	262.30	299.83	336.35	376.2	412.0
512	214.97	288.23	334.50	379.00	443.4	493.2
1024	218.60	293.40	343.55	391.02	459.8	512.6
2048	220.00	297.30	347.91	396.83	466.7	525.4

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 15°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
32	75.68	71.34	68.39	65.49	61.04	57.40
128	90.55	88.21	85.96	84.74	80.71	78.42
512	97.70	96.93	95.90	95.47	95.13	93.87
1024	99.35	98.67	98.50	98.49	98.65	97.56
2048	100.00	100.00	100.00	100.00	100.00	100.00

Dissociation Constants $\times 10^4$.

v	0°	15°	25°	35°	50°	65°
512	.....	.....	.....	.....	.....	.....
1024	.....	.....	.....	.....	.....	.....
2048	.....	.....	.....	.....	.....	.....

Temperature Coefficients in Conductivity Units.

v	0–15°	15–25°	25–35°	35–50°	50–65°
32	3.04	2.64	2.15	1.63	1.14
128	4.21	3.75	3.65	2.66	2.39
512	4.88	4.63	4.55	4.30	3.32
1024	5.05	4.87	4.80	4.59	3.52
2048	5.15	5.06	4.89	4.66	3.19

Temperature Coefficients in Per Cent.

v	0–15°	15–25°	25–35°	35–50°	50–65°
32	1.83	1.25	0.90	0.63	0.40
128	2.11	1.43	1.22	0.79	0.64
512	2.27	1.61	1.36	1.14	0.75
1024	2.31	1.66	1.40	1.17	0.77
2048	2.34	1.70	1.41	1.17	0.84

1, 3, 5-Dinitrobenzoic Acid (Wm.).

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 15°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
512	122.28	171.4	203.6	233.3	279.7	311.8
1024	147.86	205.4	244.0	280.0	328.7	366.0
2047	167.63	231.9	273.5	324.5	382.1	426.9

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 12°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
512	55.52	57.62	58.60	58.83	59.93	59.35
1024	67.14	69.06	70.23	70.54	70.43	69.66
2048	76.12	77.96	78.72	78.86	81.31	81.25

Dissociation Constants $\times 10^4$.

v	0°	15°	25°	35°	50°	65°
512	13.5	15.3	16.2	16.4	17.5	16.4
1024	13.4	15.1	16.2	16.5	16.4	15.6
2048	11.9	13.5	14.2	14.4	17.3	17.2

Temperature Coefficients in Conductivity Units.

v	0–15°	15–25°	25–35°	35–50°	50–65°
512	3.23	3.22	2.99	3.08	2.14
1024	3.84	3.87	3.59	3.25	2.49
2048	4.23	4.16	3.95	3.84	3.16

Temperature Coefficients in Per Cent.

v	0–15°	15–25°	25–35°	35–50°	50–65°
512	2.64	1.88	1.47	1.32	0.77
1024	2.60	1.88	1.47	1.16	0.76
2048	2.52	1.79	1.44	1.19	0.74

Picric Acid (J. and Sm.).

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 15°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
32	193.0	260.2	303.7	345.1	402.0	456.2
128	201.1	272.4	319.9	365.2	433.3	485.1
512	207.6	280.9	329.6	377.5	449.3	501.2
1024	206.9	281.7	332.6	379.9	455.2	507.1
2048	203.5	277.1	325.6	372.7	441.4	503.2

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 15°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
32	93.0	92.4	91.3	90.8	89.0	90.0
128	96.9	96.7	96.2	96.1	95.9	95.7
512	100.0	99.7	99.1	99.4	99.4	98.8
1024	100.0	100.0	100.0	100.0	100.0	100.0
2048	100.0	100.0	100.0	100.0	100.0	100.0

Dissociation Constants $\times 10^4$.

v	0°	15°	25°	35°	50°	65°
32	.....	.....	.....	.....	.....	.....
128	.....	.....	.....	.....	.....	.....
512	.....	.....	.....	.....	.....	.....
1024	.....	.....	.....	.....	.....	.....
2048	.....	.....	.....	.....	.....	.....

Temperature Coefficients in Conductivity Units.

v	0–15°	15–25°	25–35°	35–50°	50–65°
32	4.48	4.35	4.14	3.79	3.61
128	4.75	4.75	4.53	4.54	3.45
512	4.89	4.87	4.79	4.79	3.46
1024	4.99	4.89	4.93	5.12	3.46
2048	4.73	4.85	4.71	4.58	3.44

Temperature Coefficients in Per Cent.

v	0–15°	15–25°	25–35°	35–50°	50–65°
32	2.32	1.67	1.36	1.09	0.90
128	2.36	1.77	1.42	1.22	0.79
512	2.36	1.73	1.42	1.27	0.77
1024	2.41	1.74	1.48	1.34	0.75
2048	2.30	1.75	1.45	1.22	0.76

Salicylic Acid (Wt. and Sp.).

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 6.9°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
64	.....	.....	80.50	92.80	110.55	124.6
128	62.65	75.59	108.3	125.1	148.72	166.5
512	105.4	126.4	181.2	207.0	249.1	280.1
1024	130.7	156.9	223.2	255.4	301.7	337.2
2048	153.8	183.9	259.9	295.7	350.1	592.6

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 6.9°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
64	.....	.....	22.80	23.02	23.37	23.13
128	28.09	29.06	30.68	31.03	31.44	30.96
512	47.28	48.62	51.34	51.37	52.67	52.00
1024	58.60	60.34	63.22	63.37	63.78	62.58
2048	68.96	70.73	73.62	73.36	74.01	72.67

Dissociation Constants $\times 10^4$.

v	0°	6.9°	25°	35°	50°	65°
64	.....	.....	10.5	10.7	11.1	10.9
128	8.6	9.3	10.6	10.9	11.2	10.8
512	8.3	9.0	10.6	10.6	11.4	11.0
1024	8.1	9.0	10.6	10.7	11.0	10.2
2048	7.5	8.4	9.4	9.9	.....	.....

Temperature Coefficients in Conductivity Units.

v	0–6.9°	6.9–25°	25–35°	35–50°	50–65°
64	.....	.....	1.23	1.18	0.94
128	1.88	1.83	1.68	1.57	1.20
512	3.12	3.00	2.58	2.81	2.07
1024	3.80	3.63	3.22	3.09	2.37
2048	4.36	4.19	3.58	3.63	2.77

Temperature Coefficients in Per Cent.

v	0–6.9°	6.9–25°	25–35°	35–50°	50–65°
64	.....	.....	1.53	1.27	0.85
128	2.99	2.42	1.55	1.25	0.81
512	2.96	2.37	1.42	1.35	0.83
1024	2.91	2.31	1.41	1.21	0.79
2048	2.84	2.26	1.38	1.23	0.79

Acetylsalicylic Acid (Sp.).

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 15°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
128	40.40	52.78	60.60	68.89	79.41	.....
512	73.10	95.21	109.27	124.34	142.88	.....
1024	92.60	121.0	139.3	158.72	184.09	.....
2048	118.10	154.5	177.6	205.07	238.31	.....

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 15°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
128	18.30	17.75	17.59	17.31	17.13	.....
512	33.11	32.00	31.73	31.25	30.82	.....
1024	41.49	40.68	40.45	39.89	39.72	.....
2048	53.50	51.95	51.55	51.54	51.42	.....

Dissociation Constants $\times 10^4$.

v	0°	15°	25°	35°	50°	65°
128	3.2	3.0	2.9	2.8	2.7	.....
512	3.2	2.9	2.9	2.8	2.7	.....
1024	3.0	2.7	2.7	2.6	2.6	.....
2048	3.0	2.7	2.7	2.7	2.7	.....

Temperature Coefficients in Conductivity Units.

v	0–15°	15–25°	25–35°	35–50°	50–65°
128	0.83	0.78	0.83	0.70	.....
512	1.47	1.41	1.51	1.24	.....
1024	1.89	1.83	1.94	1.69	.....
2048	2.43	2.30	2.75	2.35	.....

Temperature Coefficients in Per Cent.

v	0–15°	15–25°	25–35°	35–50°	50–65°
128	2.04	1.48	1.37	1.02	.....
512	2.01	1.48	1.38	1.00	.....
1024	2.04	1.51	1.39	1.06	.....
2048	2.14	1.49	1.54	1.14	.....

Sulphosalicylic Acid (Sp.).

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 15°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
32	209.41	283.71	332.02	377.60	432.91	486.80
128	239.61	328.53	386.46	440.07	508.88	575.40
512	291.92	403.30	474.12	538.54	622.44	706.24
1024	322.50	443.04	522.38	598.13	701.32	785.66
2048	352.00	485.01	570.44	651.70	762.35	858.00

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 15°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
128	.....	.....	.....	.....	.....	.....
512	.....	.....	.....	.....	.....	.....
1024	.....	.....	.....	.....	.....	.....
2048	.....	.....	.....	.....	.....	.....

Dissociation Constants $\times 10^4$.

v	0°	15°	25°	35°	50°	65°
128	.....	.....	.....	.....	.....	.....
512	.....	.....	.....	.....	.....	.....
1024	.....	.....	.....	.....	.....	.....
2048	.....	.....	.....	.....	.....	.....

Temperature Coefficients in Conductivity Units.

v	0–15°	15–25°	25–35°	35–50°	50–65°
32	4.95	3.40	4.56	3.69	3.59
128	5.93	5.79	5.36	4.61	4.43
512	7.42	7.08	6.44	5.59	5.58
1024	8.04	7.93	7.57	6.84	5.62
2048	8.87	8.54	8.13	7.38	6.38

Temperature Coefficients in Per Cent.

v	0–15°	15–25°	25–35°	35–50°	50–65°
32	2.36	1.70	1.37	0.98	0.83
128	2.47	1.76	1.38	1.05	0.87
512	2.54	1.75	1.35	1.04	0.89
1024	2.49	1.79	1.44	1.14	0.81
2048	2.51	1.76	1.42	1.13	0.84

m-Hydroxybenzoic Acid (Wt. and K.).

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 13.22°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
64	14.65	19.97	24.35	27.74	31.74	34.75
128	20.48	27.85	33.95	38.63	44.46	48.77
512	39.04	52.89	64.50	73.28	83.92	92.10
1024	53.09	72.01	87.80	99.70	116.0	127.5
2048	71.20	96.03	116.9	132.6	151.9	167.6

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 13.22°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
64	6.57	6.82	6.90	6.88	6.7	6.4
128	9.18	9.50	9.62	9.58	9.4	9.1
512	17.51	18.05	18.27	18.19	17.7	17.1
1024	23.81	24.56	24.87	24.74	24.5	23.6
2048	31.93	32.77	33.12	32.91	32.1	31.1

Dissociation Constants $\times 10^4$.

v	0°	13.22°	25°	35°	50°	65°
64	0.722	0.779	0.799	0.795	0.755	0.694
128	0.725	0.780	0.799	0.794	0.764	0.689
512	0.725	0.776	0.789	0.798	0.745	0.687
1024	0.726	0.781	0.804	0.794	0.752	0.692
2048	0.715	0.780	0.801	0.788	0.743	0.685

Temperature Coefficients in Conductivity Units.

v	0–13.22°	13.22–25°	25–35°	35–50°	50–65°
64	0.40	0.37	0.34	0.27	0.20
128	0.56	0.52	0.47	0.39	0.29
512	1.05	0.99	0.88	0.71	0.54
1024	1.44	1.31	1.19	1.09	0.77
2048	1.94	1.72	1.57	1.29	1.04

Temperature Coefficients in Per Cent.

v	0–13.22°	13.22–25°	25–35°	35–50°	50–65°
64	2.75	1.86	1.39	0.98	0.64
128	2.72	1.86	1.38	1.01	0.64
512	2.68	1.86	1.36	0.97	0.64
1024	2.71	1.81	1.36	1.09	0.66
2048	2.74	1.78	1.34	0.99	0.68

p-Hydroxybenzoic Acid (Wt. and K.).

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 13.23°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
64	8.746	11.99	14.79	16.97	19.41	21.43
128	18.29	16.81	20.69	23.71	26.70	29.38
512	23.87	32.45	39.96	45.77	51.95	57.15
1024	33.03	44.91	55.30	63.24	72.92	80.22
2048	44.40	60.39	74.14	85.60	99.51	109.38

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 13.23°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
64	3.92	4.09	4.19	4.21	4.11	3.98
128	5.51	5.74	5.86	5.88	5.65	5.46
512	10.70	11.08	11.32	11.36	11.00	10.62
2024	14.81	15.32	15.66	15.70	15.43	14.91
2048	19.91	20.61	21.00	21.00	21.07	20.33

Dissociation Constants $\times 10^4$.

v	0°	13.23°	25°	35°	50°	65°
64	0.250	0.273	0.286	0.289	0.275	0.258
128	0.251	0.273	0.285	0.287	0.267	0.246
512	0.251	0.269	0.282	0.284	0.239	0.245
0124	0.252	0.271	0.284	0.285	0.275	0.261
2048	0.242	0.261	0.273	0.273	0.275	0.253

Temperature Coefficients in Conductivity Units.

v	0–13.23°	13.23–25°	25–35°	35–50°	50–65°
64	0.25	0.24	0.22	0.16	0.13
128	0.34	0.33	0.30	0.20	0.27
512	0.65	0.64	0.58	0.41	0.35
1024	0.90	0.88	0.79	0.65	0.49
2048	1.12	1.17	1.05	0.93	0.66

Temperature Coefficients in Per Cent.

v	0–13.25°	13.25–25°	25–35°	35–50°	50–65°
64	2.80	1.98	1.46	0.94	0.69
128	2.78	1.96	1.46	0.84	0.67
512	2.72	1.97	1.45	0.90	0.68
1024	2.72	1.97	1.44	1.00	0.67
2048	2.72	1.94	1.41	1.01	0.67

1, 2, 4-Dihydroxybenzoic Acid (Wm.).

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 15°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
128	44.74	65.11	79.27	92.14	109.2	122.2
512	80.73	116.40	140.15	162.02	189.7	211.9
1024	103.30	147.77	177.20	203.58	241.4	266.7
2048	127.65	180.58	215.81	248.28	294.4	322.1

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 15°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
128	20.16	21.71	22.70	23.10	23.35	22.94
512	36.37	38.82	40.12	40.62	40.48	39.78
1024	46.54	49.28	50.73	51.04	51.63	50.07
2048	57.51	60.22	61.79	62.24	62.96	60.48

Dissociation Constants $\times 10^4$.

v	0°	15°	25°	35°	50°	65°
128	3.98	4.62	5.21	5.42	5.56	5.33
512	4.06	4.81	5.25	5.43	5.38	5.13
1024	3.94	4.66	5.08	5.12	5.38	4.90
2048	3.80	4.45	4.88	5.01	5.23	4.52

Temperature Coefficients in Conductivity Units.

v	0–15°	15–25°	25–35°	35–50°	50–65°
128	1.36	1.42	1.28	1.14	0.86
512	2.38	2.38	2.19	1.85	1.48
1024	2.97	2.94	2.64	2.52	1.69
2048	3.53	3.52	3.25	3.08	1.85

Temperature Coefficients in Per Cent.

v	0–15°	15–25°	25–35°	35–50°	50–65°
128	2.04	2.17	1.62	1.24	0.79
512	2.95	2.04	1.56	1.14	0.78
1024	2.87	1.99	1.46	1.24	0.70
2048	2.77	1.92	1.50	1.24	0.63

1, 2, 5-Dihydroxybenzoic Acid (Wm.).*

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 15°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
128	66.18	95.50	113.96	131.22	.....	.....
512	114.49	163.00	191.90	219.43	.....	.....
1024	141.50	200.68	234.70	267.72	.....	.....
2048	184.36	252.38	290.83	328.42	.....	.....

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 15°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
128	29.85	31.87	32.49	32.83	.....	.....
512	51.63	54.39	54.71	54.89	.....	.....
1024	63.82	66.97	66.91	66.98	.....	.....
2048	83.15	84.22	82.92	82.17	.....	.....

Dissociation Constants $\times 10^4$.

v	0°	15°	25°	35°	50°	65°
128	9.9	11.7	12.2	12.5	.....	.....
512	10.8	12.7	12.9	13.0	.....	.....
1024	10.6	13.3	13.2	13.3	.....	.....
2048	23.9	22.0	19.7	18.5	.....	.....

Temperature Coefficients in Conductivity Units.

v	0–15°	15–25°	25–35°	35–50°	50–65°
128	1.95	1.85	1.73	.....	.....
512	3.23	2.89	2.75	.....	.....
1024	3.95	3.40	3.30	.....	.....
2048	4.54	3.86	3.76	.....	.....

Temperature Coefficients in Per Cent.

v	0–15°	15–25°	25–35°	35–50°	50–65°
128	2.94	1.93	1.52	.....	.....
512	2.83	1.77	1.43	.....	.....
1024	2.79	1.70	1.41	.....	.....
2048	2.46	1.52	1.29	.....	.....

*Decomposes too rapidly above 35° to obtain satisfactory results.

Gallic Acid (Wt. and Sm.).

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 6.5°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
64	9.79	11.66	16.90	19.36	23.26	26.19
128	14.01	16.55	23.60	27.10	33.09	36.64
512	28.89	34.08	48.33	55.12	67.58	75.54
1024	37.84	44.63	62.50	71.18	86.15	95.96
2048	51.50	60.72	85.02	96.7	112.36	124.15

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 6.5°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
64	4.44	4.59	4.86	4.89	5.07	5.09
128	6.36	6.51	6.78	6.85	7.20	7.12
512	13.11	13.41	13.89	13.92	14.72	14.66
1024	17.18	17.55	17.96	17.98	18.76	18.63
2048	23.37	23.88	24.43	24.43	24.47	24.13

Dissociation Constants $\times 10^4$.

v	0°	6.5°	25°	35°	$\alpha 50°$	$\alpha 65°$
64	0.323	0.345	0.387	0.393	0.42	0.42
128	0.338	0.354	0.385	0.394	0.42	0.42
512	0.387	0.405	0.437	0.440	0.49	0.41
1024	0.348	0.365	0.384	0.385	0.42	0.42
2048	0.349	0.366	0.386	0.386	0.38	0.37

Temperature Coefficients in Conductivity Units.

v	0–6.5°	6.5–25°	25–35°	35–50°	50–65°
64	0.29	0.28	0.25	0.26	0.19
128	0.39	0.38	0.35	0.40	0.24
512	0.80	0.77	0.68	0.83	0.53
1024	1.05	0.97	0.87	1.00	0.65
2048	1.42	1.31	1.17	1.04	0.79

Temperature Coefficients in Per Cent.

v	0–6.5°	6.5–25°	25–35°	35–50°	50–65°
64	2.94	2.43	1.46	1.34	0.81
128	2.79	2.30	1.48	1.48	0.72
512	2.77	2.26	1.41	1.51	0.78
1024	2.76	2.17	1.39	1.40	0.76
2048	2.75	2.16	1.38	1.08	0.70

o-Aminobenzoic Acid (Wt.).

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 7.5°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
64	3.071	4.172	7.150	9.001	.....	.....
128	4 642	6.283	10.71	13.39	.....	.....
512	10.90	14.31	23.26	28.96	.....	.....
1024	16.03	20.48	33.53	41.57	.....	.....
2048	21.93	28.30	45.26	55.78	.....	.....

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 7.5°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
64	1.39	1.60	2.05	2.27	.....	.....
128	2.12	2.42	3.07	3.38	.....	.....
512	4.93	5.50	6.67	7.31	.....	.....
1024	7.25	7.87	9.62	10.48	.....	.....
2048	7.88	10.88	13.00	14.07	.....	.....

Dissociation Constants $\times 10^4$.

v	0°	7.5°	25°	35°	$\alpha 50°$	$\alpha 65°$
64	0.0306	0.0408	0.0671	0.0824	.....	.....
128	0.0360	0.0467	0.0761	0.0922	.....	.....
512	0.0499	0.0626	0.0932	0.112	.....	.....
1024	0.0554	0.0658	0.1000	0.120	.....	.....
2048	0.0329	0.0649	0.0948	0.113	.....	.....

Temperature Coefficients in Conductivity Units.

v	0–7.5°	7.5–25°	25–35°	35–50°	50–65°
64	0.15	0.17	0.19	.....	.....
128	0.21	0.25	0.27	.....	.....
512	0.45	0.51	0.57	.....	.....
1024	0.65	0.72	0.81	.....	.....
2048	0.85	0.97	1.05	.....	.....

Temperature Coefficients in Per Cent.

v	0–7.5°	7.5–25°	25–35°	35–50°	50–65°
64	4.78	4.08	2.59	.....	.....
128	4.52	3.98	2.57	.....	.....
512	4.17	3.58	2.45	.....	.....
1024	4.03	3.46	2.40	.....	.....
2048	3.87	3.43	2.33	.....	.....

m-Aminobenzoic Acid (Wm.).

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 18°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
.....	.....	.....	.....	.....	.....	.....
128	3.57	6.91	8.54	11.09	.....	.....
512	6.26	10.33	12.17	14.96	.....	.....
1024	11.75	22.61	27.77	35.57	.....	.....
2048	17.20	32.38	39.37	50.01	.....	.....

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 18°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
128	1.69	2.26	2.57	2.82	.....	.....
512	2.97	3.38	3.66	3.80	.....	.....
1024	5.57	7.39	8.35	9.04	.....	.....
2048	8.15	10.59	11.83	12.71	.....	.....

Dissociation Constants $\times 10^4$.

v	0°	18°	25°	35°	50°	65°
128	.....	.....	.....	.....	.....	.....
512	.....	.....	.....	.....	.....	.....
1024	.....	.....	.....	.....	.....	.....
2048	.....	.....	.....	.....	.....	.....

Temperature Coefficients in Conductivity Units.

v	0–18°	18–25°	25–35°	35–50°	50–65°
128	0.19	0.23	0.25	.....	.....
512	0.22	0.26	0.28	.....	.....
1024	0.60	0.73	0.78	.....	.....
2048	0.84	1.00	1.06	.....	.....

Temperature Coefficients in Per Cent.

v	0–18°	18–25°	25–35°	35–50°	50–65°
128	5.32	3.33	2.93	.....	.....
512	3.51	2.52	2.30	.....	.....
1024	5.11	3.23	2.81	.....	.....
2048	4.88	3.09	2.69	.....	.....

p-Aminobenzoic Acid (Wt.).

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 10.19°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
64	3.711	5.136	7.370	8.92	.....	.....
128	5.346	7.527	10.84	12.97	.....	.....
512	12.57	17.39	24.54	29.06	.....	.....
1024	18.87	25.71	35.07	41.31	.....	.....
2048	28.32	37.21	50.13	58.56	.....	.....

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 10.19°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
64	1.68	1.87	2.11	2.25	.....	.....
128	2.42	2.75	3.11	3.27	.....	.....
512	5.69	6.34	7.04	7.47	.....	.....
1024	8.54	9.38	10.07	10.42	.....	.....
2048	13.73	13.28	14.38	14.77	.....	.....

Dissociation Constants $\times 10^4$.

v	0°	10.19°	25°	35°	50°	65°
64	0.0448	0.0559	0.0714	0.0799	.....	.....
128	0.0468	0.0606	0.0780	0.0865	.....	.....
512	0.0670	0.0838	0.104	0.118	.....	.....
1024	0.0678	0.0949	0.110	0.119	.....	.....
2048	0.107	0.104	0.118	0.125	.....	.....

Temperature Coefficients in Conductivity Units.

v	0–10.19°	10.19–25°	25–35°	35–50°	50–65°
64	0.14	0.15	0.16	.....	.....
128	0.21	0.22	0.21	.....	.....
512	0.47	0.48	0.45	.....	.....
1024	0.67	0.63	0.62	.....	.....
2048	0.87	0.87	0.84	.....	.....

Temperature Coefficients in Per Cent.

v	0–10.19°	10.19–25°	25–35°	35–50°	50–65°
64	3.78	2.92	2.10	.....	.....
128	4.00	2.97	1.96	.....	.....
512	3.76	2.78	1.84	.....	.....
1024	3.57	2.46	1.79	.....	.....
2048	3.08	2.35	1.68	.....	.....

Metanilic Acid (Wt. and Sp.).

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 12°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
32	11.60	18.01	26.89	35.01	49.48	66.05
128	22.90	34.84	51.40	66.89	92.74	123.89
512	42.76	65.66	95.10	121.1	165.15	216.84
1024	58.01	87.96	125.8	158.1	210.0	267.3
2048	76.38	115.1	162.8	203.5	364.3	331.7

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 12°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
32	5.23	6.32	7.67	8.75	10.53	12.25
128	10.27	12.23	14.64	16.72	19.73	12.99
512	19.26	23.04	27.10	30.27	35.14	40.24
1024	26.13	30.87	25.84	39.53	44.66	49.61
2048	34.41	40.39	46.37	50.88	56.23	61.56

Dissociation Constants $\times 10^4$.

v	0°	12°	25°	35°	50°	65°
32	0.90	1.33	1.99	2.62	3.87	5.34
128	0.89	1.33	1.96	2.62	3.80	5.36
512	0.90	1.35	1.97	2.57	3.72	5.29
1024	0.90	1.35	1.96	2.52	3.52	4.79
2048	0.88	1.34	1.96	2.57	3.53	4.81

Temperature Coefficients in Conductivity Units.

v	0–12°	12–25°	25–35°	35–50°	50–65°
32	0.53	0.68	0.81	0.96	1.10
128	1.00	1.28	1.55	1.72	2.08
512	1.91	2.27	2.60	2.94	3.44
1024	2.50	2.91	3.23	3.46	3.82
2048	3.23	3.67	4.07	4.05	4.49

Temperature Coefficients in Per Cent.

v	0–12°	12–25°	25–35°	35–50°	50–65°
32	4.61	3.79	3.02	2.74	2.23
128	4.40	3.66	3.01	2.57	2.24
512	4.46	3.45	2.73	2.43	2.09
1024	4.30	3.41	2.63	2.19	1.81
2048	4.22	3.19	2.50	2.00	1.63

Sulphanilic Acid (Wt. and Sp.).

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 6.3°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
32	21.80	27.25	45.39	58.35	78.23	100.50
128	40.66	50.89	85.40	107.80	145.00	186.40
512	74.25	91.33	148.66	180.88	237.00	298.00
1024	96.40	118.1	182.77	221.60	287.00	352.60
2048	121.5	148.4	223.00	268.00	336.76	406.67

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 6.3°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
32	9.82	10.69	12.94	14.59	16.64	18.65
128	18.31	19.96	24.34	26.95	30.85	34.59
512	33.44	35.82	41.79	45.22	50.42	55.30
1024	43.42	46.33	52.08	55.40	61.06	65.44
2048	54.71	58.21	63.52	67.00	71.65	75.48

Dissociation Constants $\times 10^4$.

v	0°	6.3°	25°	35°	50°	65°
32	3.34	4.00	6.01	7.78	10.4	13.4
128	3.20	3.89	6.09	7.77	10.7	14.2
512	3.28	3.90	5.86	7.30	10.0	13.4
1024	3.26	3.90	5.53	6.72	9.35	12.1
2048	3.23	3.96	5.40	6.64	8.84	11.3

Temperature Coefficients in Conductivity Units.

v	0–6.3°	6.3–25°	25–35°	35–50°	50–65°
32	0.88	0.97	1.30	1.33	1.48
128	1.62	1.84	2.24	2.48	2.73
512	2.71	3.07	3.22	3.73	4.07
1024	3.45	3.46	3.88	4.36	4.37
2048	4.27	3.99	4.50	4.58	4.66

Temperature Coefficients in Per Cent.

v	0–6.3°	6.3–25°	25–35°	35–50°	50–65°
32	4.03	3.56	2.68	2.28	1.89
128	3.99	3.62	2.62	2.30	1.88
512	3.65	3.36	2.17	2.06	1.72
1024	3.57	2.93	2.12	1.97	1.52
2048	3.52	2.70	2.02	1.91	1.38

Picramic Acid (Sp.).

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 15°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
512	24.00	39.78	51.80	64.93	85.67	110.80
1024	32.90	54.09	70.16	88.60	119.00	153.50
2048	44.60	73.80	95.20	119.70	161.8	208.4

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 15°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
512	10.82	13.30	14.73	16.27	18.22	20.62
1024	14.84	18.08	19.95	22.20	25.32	28.57
2048	20.10	24.61	27.20	29.93	34.42	38.79

Dissociation Constants $\times 10^4$.

v	0°	15°	25°	35°	50°	65°
512	0.256	0.398	0.497	0.617	0.793	1.05
1024	0.253	0.389	0.486	0.619	0.838	1.11
2048	0.247	0.392	0.496	0.624	0.882	1.20

Temperature Coefficients in Conductivity Units.

v	0–15°	15–25°	25–35°	35–50°	50–65°
512	1.05	1.20	1.31	1.38	1.67
1024	1.41	1.61	1.84	2.02	2.30
2048	1.95	2.26	2.25	2.80	3.11

Temperature Coefficients in Per Cent.

v	0–15°	15–25°	25–35°	35–50°	50–65°
512	4.37	3.02	2.53	2.12	1.94
1024	4.30	2.97	2.58	2.28	1.93
2048	4.37	3.10	2.57	2.34	1.92

p-Sulphaminobenzoic Acid (Wm.).

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 15°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
512	67.79	96.00	113.02	128.03	148.3	163.5
1024	90.60	124.82	146.94	167.17	189.1	213.1
2048	114.55	157.37	185.11	210.05	243.9	270.5

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 15°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
512	30.59	32.06	32.31	32.17	31.67	30.64
1024	40.88	41.69	42.01	42.01	40.38	39.93
2048	51.68	52.56	52.92	52.79	52.08	50.69

Dissociation Constants $\times 10^4$.

v	0°	15°	25°	35°	50°	65°
512	2.63	2.96	3.01	2.98	2.87	2.64
1024	2.76	2.91	2.97	2.97	2.67	2.59
2048	2.70	2.84	2.91	2.88	2.76	2.54

Temperature Coefficients in Conductivity Units.

v	0–15°	15–25°	25–35°	35–50°	50–65°
512	1.88	1.70	1.50	1.35	1.01
1024	2.28	2.21	2.02	1.46	1.27
2048	2.85	2.77	2.49	2.26	1.77

Temperature Coefficients in Per Cent.

v	0–15°	15–25°	25–35°	35–50°	50–65°
512	2.77	1.77	1.17	1.06	0.68
1024	2.52	1.77	1.21	0.87	0.67
2048	2.49	1.76	1.19	1.08	0.73

Benzenesulphonic Acid (Wm.).

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 15°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
8	204.57	275.38	321.07	366.1	429.3	484.9
32	210.23	281.69	336.55	370.1	453.0	515.4
128	222.14	300.43	350.47	399.8	473.9	540.6
512	226.92	305.81	356.38	407.0	475.3	544.3
1024	228.00	308.97	359.03	410.3	474.2	544.2
2048	226.83	305.71	354.22	407.1	472.9	540.1

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 15°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
8	89.72	89.13	89.43	89.23	90.32	89.09
32	92.21	91.17	90.95	90.20	95.30	94.69
128	97.43	97.24	97.62	97.44	99.70	99.30
512	99.53	98.98	99.26	99.20	100.00	100.00
1024	100.00	100.00	100.00	100.00	.....	.....

Temperature Coefficients in Conductivity Units.

v	0–15°	15–25°	25–35°	35–50°	50–65°
8	4.72	4.57	4.50	4.21	3.71
32	4.76	4.49	4.35	5.53	4.16
128	5.22	5.00	4.93	4.94	4.45
512	5.26	5.05	5.06	4.55	4.60
1024	5.40	5.01	5.13	4.26	4.67
2048	5.26	4.85	5.29	4.39	4.48

Temperature Coefficients in Per Cent.

v	0–15°	15–25°	25–35°	35–50°	50–65°
8	2.31	1.66	1.40	1.15	0.86
32	2.27	1.59	1.33	1.49	0.92
128	2.35	1.67	1.41	1.24	0.94
512	2.32	1.65	1.42	1.12	0.97
1024	2.37	1.62	1.43	1.04	0.98
2048	2.32	1.59	1.49	1.08	0.95

m-Nitrobenzenesulphonic Acid (Wm.).

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 16°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
32	195.9	202.9	307.1	350.0	409.0	465.5
128	200.5	269.1	313.8	357.2	419.5	478.4
512	202.0	272.9	320.4	367.2	430.4*	489.5
1024	204.3	275.5	323.5	369.4	432.6	491.0
2048	204.3	274.6	321.5	368.3	.....	.....

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 16°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
32	95.60	95.43	94.92	94.75	94.54	94.80
128	97.84	97.68	97.00	96.69	96.97	97.43
512	98.58	99.09	99.04	99.40	99.49	99.69
1024	100.00	100.00	100.00	100.00	100.00	100.00

Temperature Coefficients in Conductivity Units.

v	0–16°	16–25°	25–35°	35–50°	50–65°
32	4.47	4.42	4.29	3.93	3.77
128	4.57	4.47	4.34	4.15	3.93
512	4.73	4.75	4.68	4.24	3.94
1024	4.73	4.20	4.59	4.21	3.89
2048	4.69	4.69	4.68	.....	.....

Temperature Coefficients in Per Cent.

v	0–16°	16–25°	25–35°	35–50°	50–65°
32	2.28	1.68	1.40	1.12	0.92
128	2.28	1.66	1.38	1.16	0.94
512	2.34	1.74	1.46	1.15	0.92
1024	2.31	1.74	1.42	1.14	0.90
2048	2.30	1.71	1.45	.....	.....

*Interpolated.

p-Toluenesulphonic Acid (Wm.).

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 12°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
32	203.0	258.5	317.3	363.2	430.3	489.4
128	208.4	267.0	328.2	374.7	440.0	499.3
512	210.0	269.0	331.7	376.8	444.2	502.0
1024	210.6	269.7	332.7	380.3	445.9	503.4
2048	206.7	266.4	327.7	379.8	445.3	502.6

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 12°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
32	96.4	95.8	95.4	95.3	96.5	97.2
128	99.0	99.0	98.7	98.7	98.7	99.2
512	99.7	99.7	99.7	99.3	99.6	99.7
1024	100.0	100.0	100.0	100.0	100.0	100.0
2048	.....	.....	.....	.....	.....	.....

Temperature Coefficients in Conductivity Units.

v	0–12°	12–25°	25–35°	35–50°	50–65°
32	4.62	4.52	4.59	4.59	3.94
128	4.88	4.76	4.65	4.39	3.95
512	4.92	4.82	4.51	4.52	3.85
1024	4.93	4.84	4.76	4.44	3.83
2048	4.97	4.76	5.21	4.87	3.82

Temperature Coefficients in Per Cent.

v	0–12°	12–25°	25–35°	35–50°	50–65°
32	2.28	1.75	1.45	1.27	0.92
128	2.34	1.76	1.42	1.17	0.90
512	2.35	1.79	1.36	1.20	0.87
1024	2.34	1.80	1.43	1.17	0.86
2048	2.40	1.79	1.59	1.31	0.86

1, 2, 4-Nitrotoluenesulphonic Acid (Wm.).

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 15°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
8	176.9	240.9	275.6	312.6	*	*
32	193.0	264.1	303.6	344.2	.....	.....
128	198.4	272.0	312.4	354.7	.....	.....
512	199.9	274.3	315.6	358.6	.....	.....
1024	200.5	276.5	318.4	361.9	.....	.....
2048	199.7	274.5	314.8	357.6	.....	.....

Percentage Dissociation.

v	α °	$\alpha 15°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
8	88.22	87.12	86.94	86.38	.....	.....
32	96.27	95.52	95.35	95.13	.....	.....
128	98.97	98.37	98.13	98.02	.....	.....
512	99.62	99.22	99.10	99.08	.....	.....
1024	100.00	100.00	100.00	100.00	.....	.....

Temperature Coefficients in Conductivity Units.

v	0–15°	15–25°	25–35°	35–50°	50–65°
8	4.00	3.86	3.70	.....	.....
32	4.44	4.31	4.06	.....	.....
128	4.60	4.49	4.23	.....	.....
512	4.65	4.59	4.30	.....	.....
1024	4.74	4.67	4.35	.....	.....
2048	4.67	4.48	4.28	.....	.....

Temperature Coefficients in Per Cent.

v	0–15°	15–25°	25–35°	35–50°	50–65°
8	2.26	1.60	1.34	.....	.....
32	2.30	1.63	1.34	.....	.....
128	2.32	1.65	1.35	.....	.....
512	2.33	1.67	1.36	.....	.....
1024	2.37	1.69	1.37	.....	.....
2048	2.34	1.63	1.36	.....	.....

*Higher temperatures were not studied because of lack of material.

1, 4, 2-Nitrotoluenesulphonic Acid (Wm.).

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 16°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
8	203.0	281.8	320.5	364.3	433.3	493.4
32	221.6	308.7	349.5	393.1	462.1*	524.8
128	225.3	312.8	355.6	407.6	476.7	542.6
512	228.3	317.5	360.7	411.8	486.0	554.5
1024	228.9	318.5	362.3	413.6	487.5	556.3
2048	228.0	318.7	360.8	412.2	485.4	553.2

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 16°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
8	88.68	88.48	88.46	88.08	88.88	88.69
32	96.81	96.92	96.47	95.04	94.79	94.34
128	98.43	98.21	98.15	98.55	97.78	97.54
512	99.74	99.69	99.56	99.56	99.69	99.67
1024	100.0	100.0	100.0	100.0	100.0	100.0

Dissociation Constants $\times 10^4$.

v	0°	16°	25°	35°	50°	65°
512	.....	.....	.....	.....	.....	.....
1024	.....	.....	.....	.....	.....	.....
2048	.....	.....	.....	.....	.....	.....

Temperature Coefficients in Conductivity Units.

v	0–16°	16–25°	25–35°	35–50°	50–65°
8	4.90	4.30	4.38	4.60	4.01
32	5.42	4.53	4.36	4.60	4.18
128	5.44	4.76	5.20	4.61	4.39
512	5.55	4.80	5.11	4.95	4.57
1024	5.58	4.87	4.95	4.92	4.59
2048	5.65	4.68	5.14	4.88	4.52

Temperature Coefficients in Per Cent.

v	0–16°	16–25°	25–35°	35–50°	50–65°
8	2.41	1.53	1.37	1.26	0.92
32	2.44	1.47	1.25	1.17	0.91
128	2.41	1.52	1.46	1.13	0.92
512	2.43	1.51	1.42	1.20	0.94
1024	2.44	1.53	1.37	1.19	0.94
2048	2.48	1.47	1.42	1.18	0.93

o-Toluic Acid (Wt. and Sm.).

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 12°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
512	54.71	68.32	81.09	88.44	96.41	102.41
2048	71.65	89.87	106.7	116.7	127.31	134.94
2048	95.06	118.7	141.0	154.7	168.46	177.70

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 12°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
512	24.76	24.11	23.23	22.20	20.50	19.10
1024	32.44	31.71	30.50	29.47	27.29	26.10
2048	43.01	41.75	40.54	39.16	35.83	33.15

Dissociation Constants $\times 10^4$.

v	0°	12°	25°	35°	50°	65°
512	1.59	1.49	1.37	1.25	1.03	0.88
1024	1.52	1.44	1.32	1.30	1.00	0.90
2048	1.59	1.46	1.35	1.22	0.98	0.80

Temperature Coefficients in Conductivity Units.

v	0–12°	12–25°	25–35°	35–50°	50–65°
512	1.13	0.98	0.74	0.53	0.40
1024	1.52	1.29	1.00	0.71	0.51
2048	1.93	1.72	1.33	0.91	0.62

Temperature Coefficients in Per Cent.

v	0–12°	12–25°	25–35°	35–50°	50–65°
512	2.07	1.44	0.91	0.60	0.41
1024	2.11	1.44	0.94	0.61	0.40
2048	2.03	1.44	0.94	0.59	0.36

*Interpolated value.

m-Toluic Acid (Wt. and Sm.).

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 12°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
512	33.05	43.57	54.60	62.05	71.29	78.44
1024	45.20	59.43	74.16	83.93	98.70	108.33
2048	61.24	80.79	100.4	113.1	128.87	140.90

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 12°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
512	14.95	15.44	15.64	15.63	15.15	14.47
1024	20.45	21.05	21.25	21.14	21.00	20.00
2048	27.71	28.63	28.77	28.49	27.41	26.00

Dissociation Constants $\times 10^4$.

v	0°	12°	25°	35°	50°	65°
512	0.513	0.550	0.567	0.565	0.52	0.47
1024	0.513	0.548	0.560	0.554	0.54	0.48
2048	0.519	0.560	0.567	0.554	0.51	0.45

Temperature Coefficients in Conductivity Units.

v	0–12°	12–25°	25–35°	35–50°	50–65°
512	0.88	0.85	0.75	0.62	0.48
1024	1.19	1.13	0.98	0.98	0.64
2048	1.63	1.51	1.27	1.05	0.80

Temperature Coefficients in Per Cent.

v	0–12°	12–25°	25–35°	35–50°	50–65°
512	2.65	1.95	1.37	1.00	0.65
1024	2.62	1.91	1.32	1.17	0.65
2048	2.66	1.87	1.27	0.93	0.62

p-Toluic Acid (Wt. and Sm.).

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 12°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
512	.....	.....	48.48	55.44	62.98	68.37
1024	39.63	52.52	66.13	75.54	86.30	95.43
2048	54.12	71.75	89.96	103.5	114.93	125.35

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 12°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
512	.....	.....	13.89	13.96	13.42	12.68
1024	17.93	18.49	18.95	19.02	18.39	17.71
2048	24.49	25.26	25.78	26.07	24.49	23.26

Dissociation Constants $\times 10^4$.

v	0°	12°	25°	35°	50°	65°
512	.....	.....	0.438	0.433	0.406	0.359
1024	0.383	0.410	0.433	0.437	0.405	0.372
2048	0.388	0.417	0.437	0.449	0.388	0.344

Temperature Coefficients in Conductivity Units.

v	0–12°	12–25°	25–35°	35–50°	50–65°
512	.....	.....	0.70	0.50	0.36
1024	1.07	1.05	0.94	0.72	0.61
2048	1.47	1.40	1.35	0.76	0.69

Temperature Coefficients in Per Cent.

v	0–12°	12–25°	25–35°	35–50°	50–65°
512	.....	.....	1.44	0.90	0.57
1024	2.76	1.99	1.42	0.95	0.70
2048	2.72	1.95	1.50	0.73	0.60

Cinnamic Acid (Wt. and Sp.).

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 5.3°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
512	26.50	30.67	44.60	50.70	59.90	67.02
1024	36.40	42.11	61.22	69.63	80.93	90.20
2048	49.69	57.40	83.45	94.81	111.00	124.00

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 5.3°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
512	12.04	12.37	12.81	12.80	12.74	12.48
1024	16.55	16.97	17.59	17.58	17.22	16.79
2048	22.08	23.14	23.98	23.94	23.62	23.08

Dissociation Constants $\times 10^4$.

v	0°	5.3°	25°	35°	50°	65°
512	0.322	0.341	0.368	0.367	0.363	0.347
1024	0.320	0.339	0.367	0.366	0.350	0.331
2048	0.305	0.342	0.370	0.368	0.357	0.338

Temperature Coefficients in Conductivity Units.

v	0–5.3°	5.3–25°	25–35°	35–50°	50–65°
512	0.79	0.71	0.61	0.61	0.47
1024	1.08	0.97	0.84	0.75	0.62
2048	1.46	1.32	1.14	1.45	0.87

Temperature Coefficients in Per Cent.

v	0–5.3°	5.3–25°	25–35°	35–50°	50–65°
512	2.97	2.31	1.37	1.20	0.79
1024	2.96	2.30	1.37	1.08	0.77
2048	2.93	2.30	1.36	1.53	0.78

Hydrocinnamic Acid (Sp.).

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 15°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
32	5.89	8.07	9.40	10.57	11.81	13.00
128	11.49	15.64	18.32	20.56	23.20	25.28
512	22.18	30.46	35.49	39.85	44.82	49.00
1024	30.40	41.76	48.84	54.79	61.37	67.04
2048	41.60	56.41	65.65	73.72	83.02	89.66

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 15°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
32	2.67	2.70	2.69	2.66	2.55	2.44
128	5.20	5.23	5.23	5.17	5.01	4.75
512	10.04	10.17	10.14	10.03	9.67	9.20
1024	13.76	13.97	13.96	13.79	13.24	12.59
2048	18.84	18.87	18.77	18.56	17.91	16.83

Dissociation Constants $\times 10^4$.

v	0°	15°	25°	35°	50°	65°
32	0.229	0.234	0.232	0.227	0.208	0.181
128	0.223	0.225	0.225	0.220	0.206	0.185
512	0.219	0.225	0.223	0.218	0.202	0.182
1024	0.214	0.222	0.221	0.215	0.197	0.177
2048	0.214	0.214	0.212	0.205	0.191	0.166

Temperature Coefficients in Conductivity Units.

v	0–15°	15–25°	25–35°	35–50°	50–65°
32	0.145	0.133	0.104	0.083	0.079
128	0.276	0.268	0.224	0.176	0.138
512	0.552	0.503	0.436	0.331	0.278
1024	0.757	0.708	0.595	0.438	0.378
2048	0.987	0.924	0.807	0.620	0.443

Temperature Coefficients in Per Cent.

v	0–15°	15–25°	25–35°	35–50°	50–65°
32	2.47	1.65	1.24	0.78	0.67
128	2.41	1.71	1.22	0.85	0.59
512	2.49	1.65	1.23	0.83	0.62
1024	2.49	1.69	1.22	0.80	0.61
2048	2.37	1.64	1.23	0.84	0.53

o-Phthalic Acid (Wt. and Sp.).

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 8.23°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
64	55.98	66.45	85.92	96.31	110.20	122.70
128	75.56	88.32	114.8	128.06	147.58	163.86
512	122.3	145.7	189.2	212.8	244.8	272.4
1024	148.2	177.1	231.9	258.5	300.3	336.9
2048	174.2	298.4	272.7	302.7	352.7	395.1

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 8.23°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
64	25.33	24.89	24.62	24.08	23.45	22.77
128	33.75	33.09	32.90	32.01	31.40	30.41
512	55.34	54.58	54.23	53.20	52.09	50.55
1024	67.07	66.33	66.45	64.62	63.89	62.53
2048	78.81	78.05	78.14	75.68	75.04	73.33

Dissociation Constants $\times 10^4$.

v	0°	8.23°	25°	35°	50°	65°
64	13.4	12.9	12.6	11.9	11.2	10.5
128	13.4	12.8	12.6	11.8	11.2	10.4
512	13.4	12.8	12.5	11.8	11.1	10.1
1024	13.4	12.8	12.8	11.5	11.0	10.2
2048	14.3	13.6	13.6	11.5	11.0	9.8

Temperature Coefficients in Conductivity Units.

v	0–8.23°	8.23–25°	25–35°	35–50°	50–65°
64	1.27	1.16	1.04	0.93	0.83
128	1.67	1.58	1.42	1.30	1.09
512	2.84	2.59	2.36	2.13	1.84
1024	3.51	3.27	2.66	2.78	2.44
2048	4.16	3.83	3.00	3.33	2.83

Temperature Coefficients in Per Cent.

v	0–8.23°	8.23–25°	25–35°	35–50°	50–65°
64	2.27	1.75	1.21	0.96	0.75
128	2.24	1.79	1.24	1.02	0.74
512	2.33	1.78	1.25	1.01	0.75
1024	2.37	1.85	1.15	1.08	0.81
2048	2.39	1.84	1.10	1.10	0.80

4, 5-Dichlorphthalic Acid (Wm.).

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 15°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
128	194.24	353.00	286.82	318.34	354.7	378.7
512	238.55	314.66	359.02	398.42	451.7	492.5
1024	263.80	348.53	397.13	440.78	499.3	543.3
2048	288.09	378.49	436.03	487.47	562.8	614.0

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 15°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
128	.....	.....	.....	.....	.....	.....
512	.....	.....	.....	.....	.....	.....
1024	.....	.....	.....	.....	.....	.....
2048	.....	.....	.....	.....	.....	.....

Dissociation Constants $\times 10^4$.

v	0°	15°	25°	35°	50°	65°
128	.....	.....	.....	.....	.....	.....
512	.....	.....	.....	.....	.....	.....
1024	.....	.....	.....	.....	.....	.....
2048	.....	.....	.....	.....	.....	.....

Temperature Coefficients in Conductivity Units.

v	0–15°	15–25°	25–35°	35–50°	50–65°
128	3.91	1.38	3.15	2.42	1.60
512	5.07	4.44	3.94	3.55	2.72
1024	5.65	4.86	4.37	3.91	2.93
2048	6.03	5.75	5.14	5.02	3.41

Temperature Coefficients in Per Cent.

v	0–15°	15–25°	25–35°	35–50°	50–65°
128	2.01	1.33	1.10	0.76	0.45
512	2.13	1.41	1.10	0.89	0.60
1024	2.14	1.39	1.10	0.89	0.59
2048	2.09	1.52	1.18	1.03	0.60

Tetrachlorphthalic Acid (Wm.).

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 15°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
512	296.8	386.5	441.3	492.7	552.7	601.3
1024	328.6	432.7	495.9	555.2	617.4	669.3
2048	356.0	469.2	539.8	605.0	684.9	739.6

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 15°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
512	.....	.....	.....	.....	.....	.....
1024	.....	.....	.....	.....	.....	.....
2048	.....	.....	.....	.....	.....	.....

Dissociation Constants $\times 10^4$.

v	0°	15°	25°	35°	50°	65°
512	.....	.....	.....	.....	.....	.....
1024	.....	.....	.....	.....	.....	.....
2048	.....	.....	.....	.....	.....	.....

Temperature Coefficients in Conductivity Units.

v	0–15°	15–25°	25–35°	35–50°	50–65°
512	5.98	5.48	5.14	4.00	3.24
1024	6.94	6.32	5.93	4.15	3.46
2048	7.55	7.06	6.52	5.33	3.65

Temperature Coefficients in Per Cent.

v	0–15°	15–25°	25–35°	35–50°	50–65°
512	2.02	1.42	1.17	0.81	0.59
1024	2.11	1.46	1.20	0.75	0.56
2048	2.12	1.50	1.21	0.88	0.53

Anisic Acid (Sp.).

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 15°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
1024	35.80	50.50	59.10	67.60	80.29	90.25
2048	47.13	66.74	78.80	90.15	103.67	115.17

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 15°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
1024	16.14	16.84	16.88	16.94	17.06	16.80
2048	21.26	22.25	22.50	22.59	22.03	21.44

Dissociation Constants $\times 10^4$.

v	0°	15°	25°	35°	50°	65°
1024	0.303	0.333	0.335	0.337	0.343	0.331
2048	0.280	0.311	0.319	0.322	0.304	0.285

Temperature Coefficients in Conductivity Units.

v	0–15°	15–25°	25–35°	35–50°	50–65°
1024	0.98	0.86	0.85	0.84	0.66
2048	1.307	1.20	1.13	0.90	0.77

Temperature Coefficients in Per Cent.

v	0–15°	15–25°	25–35°	35–50°	50–65°
1024	2.74	1.70	1.43	1.24	0.82
2048	2.77	1.80	1.43	1.00	0.74

Vanillic Acid (Sp.).

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 15°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
256	18.48	26.44	31.68	36.49	42.32	47.41
512	26.16	36.65	43.30	49.89	57.80	64.62
1024	35.87	50.10	59.55	69.00	80.38	89.42
2048	47.26	67.40	80.88	93.48	109.15	120.08

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 15°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
256	8.35	8.84	9.05	9.18	9.12	8.90
512	11.82	12.25	12.38	12.56	12.46	12.13
1024	16.21	16.75	17.33	17.37	17.32	16.78
2048	21.35	22.53	23.12	23.53	23.52	22.54

Dissociation Constants $\times 10^4$.

v	0°	15°	25°	35°	50°	65°
256	0.30	0.33	0.35	0.36	0.36	0.34
512	0.31	0.33	0.34	0.35	0.35	0.33
1024	0.31	0.33	0.35	0.36	0.35	0.33
2048	0.28	0.32	0.34	0.35	0.35	0.32

Temperature Coefficients in Conductivity Units.

v	0–15°	15–25°	25–35°	35–50°	50–65°
256	0.53	0.52	0.48	0.39	0.34
512	0.70	0.66	0.66	0.53	0.45
1024	0.95	0.95	0.94	0.76	0.60
2048	1.34	1.34	1.26	1.04	0.73

Temperature Coefficients in Per Cent.

v	0.15°	15–25°	25–35°	35–50°	50–65°
256	2.87	1.98	1.52	1.07	0.80
512	2.67	1.81	1.52	1.06	0.79
1024	2.63	1.88	1.58	1.10	0.75
2048	2.80	1.99	1.55	1.11	0.67

Naphthionic Acid (Sp.).

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 15°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
1024	142.17	212.69	262.01	312.95	382.58	450.58
2048	169.80	245.52	295.41	347.20	420.93	491.21

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 15°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
1024	64.04	71.82	74.43	78.23	81.75	84.29
2048	76.58	82.98	83.92	86.80	89.94	91.90

Dissociation Constants $\times 10^4$.

v	0°	15°	25°	35°	50°	65°
1024	11.1	17.9	21.2	27.4	35.8	44.2
2048	12.2	19.7	21.4	27.9	39.3	50.9

Temperature Coefficients in Conductivity Units.

v	0–15°	15–25°	25–35°	35–50°	50–65°
1024	4.70	4.93	5.09	4.64	4.56
2048	5.05	4.99	5.16	4.92	4.68

Temperature Coefficients in Per Cent.

v	0–15°	15–25°	25–35°	35–50°	50–65°
1024	3.30	2.32	1.94	1.48	1.19
2048	3.00	2.03	1.48	1.42	1.11

Mandelic Acid (Wt. and Sm.).

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 12°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
8	12.60	16.10	19.86	22.45	25.76	28.62
32	24.49	31.21	38.56	43.62	50.07	55.40
128	46.40	59.64	72.96	82.39	94.42	104.47
512	82.21	106.1	129.6	146.2	168.20	185.86
1024	106.0	135.2	167.4	188.7	216.03	239.36
2048	132.4	168.3	205.5	234.5	268.62	298.03

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 12°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
8	5.70	5.69	5.69	5.65	5.41	5.30
32	11.09	11.03	11.05	10.98	10.52	10.25
128	20.99	20.78	20.90	20.75	19.84	19.34
512	37.20	36.98	37.18	36.84	35.35	34.41
1024	47.96	47.76	47.97	47.53	45.40	44.32
2048	59.91	59.47	59.03	59.06	56.46	55.19

Dissociation Constants $\times 10^4$.

v	0°	12°	25°	35°	50°	65°
8	4.32	4.29	4.29	4.24	3.86	3.71
32	4.30	4.27	4.29	4.24	3.86	3.66
128	4.36	4.26	4.31	4.25	3.83	3.62
512	4.30	4.24	4.30	4.20	3.78	3.53
1024	4.32	4.26	4.32	4.21	3.69	3.45
2048	4.37	4.26	4.16	4.16	3.54	3.32

Temperature Coefficients in Conductivity Units.

v	0–12°	12–25°	25–35°	35–50°	50–65°
8	0.29	0.29	0.26	0.22	0.19
32	0.56	0.56	0.51	0.43	0.35
128	1.10	1.02	0.94	0.82	0.67
512	1.99	1.81	1.66	1.47	1.18
1024	2.43	2.48	2.13	1.82	1.55
2048	2.99	2.86	2.90	2.28	1.96

Temperature Coefficients in Per Cent.

v	0–12°	12–25°	25–35°	35–50°	50–65°
8	2.32	1.80	1.30	0.99	0.74
32	2.29	1.81	1.31	0.99	0.71
128	2.38	1.72	1.29	0.99	9.71
512	2.42	1.71	1.28	1.01	0.70
1024	2.30	1.83	1.27	0.97	0.72
2048	2.26	1.70	1.40	0.97	0.73

Camphoric Acid (Wm.).

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 12°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
512	24.94	33.05	38.17	42.57	47.53	51.30
1024	34.05	45.27	52.12	57.99	63.86	69.26
2048	45.10	59.54	68.15	76.12	86.20	93.84

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 12°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
512	11.43	11.81	11.08	10.85	10.37	9.88
1024	15.60	16.18	15.13	14.78	13.94	13.34
2048	20.66	21.28	19.78	19.40	18.81	18.08

Dissociation Constants $\times 10^4$.

v	0°	12°	25°	35°	50°	65°
512	0.288	0.309	0.270	0.259	0.234	0.212
1024	0.282	0.305	0.264	0.250	0.220	0.201
2048	0.263	0.289	0.238	0.228	0.213	0.195

Temperature Coefficients in Conductivity Units.

v	0–12°	12–25°	25–35°	35–50°	50–65°
512	0.54	0.51	0.44	0.33	0.26
1024	0.75	0.68	0.59	0.39	0.36
2048	0.96	0.86	0.80	0.69	0.51

Temperature Coefficients in Per Cent.

v	0–12°	12–25°	25–35°	35–50°	50–65°
512	2.17	1.55	1.15	0.78	0.54
1024	2.20	1.57	1.13	0.67	0.56
2048	2.14	1.46	1.17	0.91	0.59

COUMARIC ACID (SP.).

Molecular Conductivity.

v	$\mu_v 0°$	$\mu_v 15°$	$\mu_v 25°$	$\mu_v 35°$	$\mu_v 50°$	$\mu_v 65°$
256	16.00	23.22	27.08	30.38	35.56	39.39
512	22.40	32.39	37.58	42.01	49.08	54.24
1024	31.48	46.00	53.38	59.52	69.57	76.92
2048	44.53	65.13	75.56	77.50	90.50	98.75

Temperature Coefficients in Conductivity Units.

v	0–15°	15–25°	25–35°	35–50°	50–65°
256	0.48	0.38	0.33	0.34	0.25
512	0.67	0.52	0.44	0.47	0.34
1024	0.97	0.74	0.61	0.67	0.49
2048	1.37	1.04	0.19	0.87	0.55

Percentage Dissociation.

v	$\alpha 0°$	$\alpha 15°$	$\alpha 25°$	$\alpha 35°$	$\alpha 50°$	$\alpha 65°$
256	7.27	7.74	7.75	7.60	7.59	7.37
512	10.18	10.80	10.74	10.51	10.48	10.15
1024	14.30	15.34	15.25	14.89	14.86	14.39
2048	20.23	21.72	21.59	19.39	19.34	18.48

Temperature Coefficients in Per Cent.

v	0–15°	15–25°	25–35°	35–50°	50–65°
256	3.00	1.64	1.21	1.13	0.71
512	2.99	1.61	1.17	1.12	0.70
1024	3.07	1.63	1.15	1.12	0.70
2048	3.08	1.60	0.25	1.12	0.61

Dissociation Constants $\times 10^4$.

v	0°	15°	25°	35°	50°	65°
256	0.223	0.254	0.253	0.244	0.243	0.229
512	0.225	0.255	0.252	0.241	0.240	0.224
1024	0.233	0.271	0.268	0.254	0.252	0.236
2048	0.250	0.294	0.290	0.228	0.226	0.205

DISCUSSION OF THE RESULTS WITH THE ORGANIC ACIDS.

It does not seem necessary or desirable, in discussing the results with the organic acids, to tabulate these results as was done in the case of the salts. The anions of these acids are not related as the cations of the salts were, and any relations must be of a more limited nature. Certain relations will, however, be pointed out, and they can easily be verified from the data for the various acids.

Take, first, the conductivities of the various acids: The presence of chlorine in acetic acid increases enormously its dissociation. Thus, at volume 32 and 0° the conductivity of acetic acid is 5.33; of dichloracetic acid 166, and of trichloracetic acid 208.7. The conductivity of cyanacetic acid under the same conditions is 68.7, and of phenylacetic acid 9. Acetic acid is slightly stronger than propionic, which at volume 32 and 0° has a conductivity of 4.63. This illustrates the general principle that in a homologous series of organic acids the lower members of the series are the stronger, at the same temperature and volume. α-brompropionic acid having a conductivity of 38, β-iodopropionic acid of 12.57, while β-acetylpropionic acid has a conductivity of 5.85. Butyric acid at the same volume and temperature has the value 5.0; α-brombutyric 42.75, showing the marked increase in the strength due to the presence of bromine.

Isobutyric acid at volume 32 and 0° has the value 4.91, while hydroxyisobutyric has the conductivity 12.11, showing the increase in the strength due to the presence of the hydroxyl group. The conductivities of butyric and isobutyric acids are very nearly the same, which is characteristic of a large number of isomeric compounds. Isovaleric acid has the conductivity 5.36.

Turning to the dibasic acids of the oxalic series, we come first to oxalic acid. This was decomposed by the platinum plates, and was therefore not studied. Malonic acid

and a large number of its derivatives were investigated. The following table gives the results for two volumes and three temperatures for all of these substances:

Acid.	0°		25°		65°	
	$v=32$	$v=1024$	$v=32$	$v=1024$	$v=32$	$v=1024$
Malonic	43.51	153.3	72.23	251.2	.....	.....
Dimethylmalonic	32.00	124.1	51.23	198.93	77.1	299.26
Ethylmalonic	40.90	146.45	64.42	231.24	90.66	330.62
Diethylmalonic	92.77	201.22	138.84	311.98	186.22	462.78
Methylethylmalonic	45.89	156.21	72.45	248.19	104.35	365.54
Isopropylmalonic	40.07	144.1	64.92	234.00	91.73	343.8
Dipropylmalonic	103.16	203.51	154.54	317.78	.....	468.0
Butylmalonic	37.53	140.0	58.72	218.3	83.93	320.1
Benzylmalonic	45.06	153.05	69.82	239.44	97.76	345.35
Allylmalonic	45.62	158.93	71.47	248.67	101.16	358.28

The presence of two methyl groups weakens the acid, while two ethyl groups more than double the strength. Ethyl, methylethyl, isopropyl, butyl, benzyl, and allyl affect the conductivity very slightly. Dipropyl more than doubles the strength of the acid. These empirical relations have a certain kind of interest, but their meaning is at present not at all fully understood.

Succinic acid at zero and $v=32$ has a conductivity of 9.21, being much less than malonic. This is in accord with the relation pointed out between the strengths of acids and their position in an homologous series. Monobromsuccinic acid was studied at $v=128$. It had a conductivity of 101.46 against succinic at this volume of 18.24, showing that bromine increases acidity. Dibromsuccinic at volume 128 and 0° has the conductivity 254.34, showing the effect on acidity of the second bromine atom

Pyrotartaric at $v=32$ has $\mu_v=10.94$, μ_v for α-tartaric at $v=32=34.18$ and for racemic = 34.60. These two isomeric acids have practically the same conductivity.

The kind of isomerism, illustrated by maleic and fumaric acids stereoisomerism, is interesting in the present connection. We have seen that ordinary isomeric acids, using that term as we generally do, have very nearly the same conductivity. Maleic and fumaric acids at the same volumes and temperatures have widely different conductivities. Thus at $v=32$ and 0°, μ_v for maleic acid $=108.1$, μ_v for fumaric $=35.46$. The results for itaconic, citraconic, and mesaconic acids differ widely. For $v=32$:

μ_v for itaconic $=13.50$ μ_v for citraconic $=68.66$ μ_v for mesaconic $=33.31$

Passing to the acids of the aromatic compounds, the introduction of chlorine into benzoic acid raises the conductivity at $v=64$ and 0° from 18.49 to 85.20. μ_v for orthonitrobenzoic at $v=128$ (0°) is 146.9, for metanitrobenzoic $=40.1$. This shows the effect of chlorine and of the nitro group in the ortho position on the acidity. The 1, 2, 4 dinitrobenzoic at 0° and $v=32$, $\mu_v=166.51$, showing that the second nitro group in these positions still further increases the acidity. The 1, 3, 5 dinitrobenzoic at $v=512$ has a value for μ_v of only 122.28.

The effect of the nitro group in increasing acidity is well illustrated by picric acid. Phenol is a very weak acid, one of the weakest, while trinitrophenol is very strong. Its dissociation is of the same order of magnitude as the strongest mineral acids.

The effect of the introduction of the hydroxyl group into benzoic acid, on the

strength of that acid, depends upon the position of the group. Benzoic acid at zero and $v=128$ has a value of $\mu_v=18.49$. μ_v for salicylic or orthohydroxybenzoic acid $=62.65$, for metahydroxybenzoic $=20.48$, while for parahydroxybenzoic at 128 and 0°, $\mu_v=18.29$.

The introduction of the second hydroxyl group raises the conductivity, the amount depending on the position of those groups. At zero and $v=128$, μ_v for 1, 2, 4 dihydroxybenzoic acid $=44.74$, while μ_v for 1, 2, 5 dihydroxybenzoic $=66.18$.

Gallic acid, or trihydroxybenzoic acid, has an interest of its own. For zero and $v=128$, $\mu_v=14.01$. The third hydroxyl, instead of raising, lowers the conductivity below that of benzoic acid itself.

The presence of the amino group lowers the strength of the acid, as would be expected. Thus, benzoic acid at 0° and $v=64$, $\mu_v=13.42$. For orthoaminobenzoic acid $\mu_v=3.07$; while for paraaminobenzoic acid $\mu_v=3.71$.

The four sulphonic acids studied are all strong, as are sulphonic acids in general.

Of the three toluic acids, the ortho is much stronger than the benzoic, while the other two are of the same order of strength. Cinnamic acid is slightly stronger than hydrocinnamic.

When we come to the dibasic phthalic acid, we have a much stronger compound than the monobasic acid. Thus, at 0° and $v=64$, μ_v for phthalic acid $=55.98$. The introduction of the second carboxyl thus increases the strength of the acid.

DISSOCIATIONS OF ORGANIC ACIDS.

It is not necessary to consider the dissociations of the several acids in detail. It is better to take up the constants calculated from the dissociations, since these are the quantities so often desired in connection with the organic acids. Some conclusions have, however, been reached, especially by White and Wightman, in connection with the dissociations of these compounds, and these will be given.

The conductivity of most of the organic acids is a parabolic function of the temperature, as is shown by comparing the values found with those calculated from interpolation formula. Several of the amino acids are exceptions to this relation, their conductivities not being a parabolic function of the temperature.

The effect of rise in temperature on the dissociation of organic acids can be formulated thus: The dissociation of some of the organic acids decreases regularly with rise in temperature from 0°. Maxima occur in the dissociation of many of the organic acids. In some cases the maximum appears between 15° and 25°; in others between 25° and 35°, while in still other cases it falls at a higher temperature, *i. e.*, around 50°. This is apparently not in accord with the Thomson-Nernst hypothesis, which connects the dissociating power of a solvent with its dielectric constant, and the dielectric constant decreases with rise in temperature.

The strong organic acids do not obey the Ostwald dilution law and, therefore, "dissociation constants" could not be calculated for them by means of this law.

Isomeric acids are not always dissociated to the same extent, and their dissociations change differently with rise in temperature.

The migration velocities of metameric ions are identical. The migration velocities of the anions of organic acids are a function of the number of atoms present in the anions. This fact is utilized to find the values of μ_∞ for the dibasic organic acids.

THE DISSOCIATION CONSTANTS.

The "constants" for the various acids are calculated by means of the Ostwald dilution law, $\frac{\alpha^2}{(1-\alpha)v}$ const. This, as is well known, does not apply to the strongly dissociated compounds, which therefore have no "constants." The constants are given for the volumes 32 and 1024, and for the temperatures 0°, 25°, and 65°.

DISSOCIATION CONSTANTS.

Acid.	0°		25°		65°	
	$v=32$	$v=1024$	$v=32$	$v=1024$	$v=32$	$v=1024$
Acetic	0.179	0.170	0.184	0.175	0.166	0.154
Cyanacetic	41.0	38.0	39.0	35.0	29.0	26.0
Phenylacetic	0.540	0.526	0.536	0.518	0.420	0.375
Propionic	0.138	0.125	0.141	0.123	0.116	0.108
α-Brompropionic	10.3	12.7	8.7	10.6	.....	.....
β-Iodopropionic	1.04	0.92	0.99	0.87	.....	.....
Acetylpropionic	0.225	0.206	0.250	0.233	0.237	0.213
n-Butyric	0.165	0.161	0.157	0.150	.....	.....
α-Brombutyric	13.1	15.6	11.0	13.2	.....	.....
Isobutyric	0.155	0.154	0.148	0.147	0.129	0.119
Hydroxyisobutyric	0.99	0.94	1.10	1.03	0.98	0.91
Isovaleric	0.187	0.170	0.169	0.161	0.125	0.109
Caprylic	.....	0.129	.....	0.129	.....	0.095
Malonic	14.8	14.8	16.3	16.7	.....	.....
Dimethylmalonic	7.57	6.90	7.75	7.21	7.45	6.77
Ethylmalonic	12.9	12.4	12.8	12.3	10.6	9.5
Methylethylmalonic	17.0	16.7	16.9	16.9	14.5	14.6
Isopropylmalonic	12.5	12.0	13.2	13.2	11.2	11.4
Dipropylmalonic	132.0	122.0	113.0	102.0	.....	79.0
Butylmalonic	11.0	11.0	10.8	10.5	9.15	8.8
Benzylmalonic	16.6	15.8	16.0	15.2	12.8	11.7
Allylmalonic	16.8	.....	16.2	.....	13.8	13.1
Succinic	0.556	0.572	0.655	0.665	0.687	0.688
Monobromsuccinic	.....	48.1	.....	39.4	.....	.....
Pyrotartaric	0.81	0.78	0.89	0.87	0.85	0.81
l-Tartaric	8.9	9.6	10.6	12.2	11.1	11.9
Racemic	9.1	10.4	10.9	12.3	9.9	10.4
Thiodiglycolic	6.10	6.24	6.23	6.36	6.08	6.16
Tricarballylic	1.87	1.95	2.11	2.15	2.19	2.27
Benzilic	.....	9.36	.....	9.02	.....	7.09
Hippuric	.....	2.13	.....	2.28	.....	2.16
Citric	6.92	7.88	8.63	10.6	10.13	11.16
Pyromucic	8.7	8.4	7.6	7.4	5.4	4.8
Crotonic	0.199	0.194	0.215	0.211	0.185	0.182
Maleic	143.0	179.0	154.0	209.0	106.0	161.5
Fumaric	9.40	10.7	10.1	11.5	8.5	8.6
Itaconic	1.24	1.27	1.53	1.50	1.55	1.53
Citraconic	43.6	43.4	38.1	37.6	30.12	31.91
Mesaconic	8.4	9.3	8.1	8.7	6.6	6.4
Phenylpropiolic	.....	52.3	.....	48.5	.....	27.7
Benzoic	.....	0.572	.....	0.649	.....	0.552
o-Chlorbenzoic	.....	18.1	.....	13.1	.....	8.8
o-Nitrobenzoic	102.0	52.0	68.9	47.0	32.7	30.8
m-Nitrobenzoic	.....	3.19	.....	3.23	.....	3.38
p-Nitrobenzoic	.....	3.58	.....	4.00	.....	3.54
1, 3, 5-Dinitrobenzoic	.....	13.4	.....	16.2	.....	15.6
Salicylic	.....	8.1	.....	10.6	.....	11.0
Acetylsalicylic	.....	3.0	.....	2.7	.....	.....
m-Hydroxybenzoic	.....	0.726	.....	0.804	.....	0.692
p-Hydroxybenzoic	.....	0.252	.....	0.284	.....	0.261
1, 2, 4-Dihydroxybenzoic	.....	3.94	.....	5.08	.....	4.90
1, 2, 5-Dihydroxybenzoic	.....	10.6	.....	13.2	.....	.....
Gallic	.....	0.348	.....	0.384	.....	0.420
o-Aminobenzoic	.....	0.0554	.....	0.100	.....	.....

DISSOCIATION CONSTANTS—Continued.

Acid.	0°		25°		35°	
	$v=32$	$v=1024$	$v=32$	$v=1024$	$v=32$	$v=1024$
m-Aminobenzoic	.....	.....	.....	.....	.....	.....
p-Aminobenzoic	.....	0.0678	.....	0.110	.....	0.119
Metanilic	0.90	0.90	1.99	1.96	5.34	4.79
Sulphanilic	3.34	3.26	6.01	5.53	13.4	12.10
Picramic	.....	0.253	.....	0.486	.....	1.11
p-Sulphaminobenzoic	.....	2.76	.....	2.97	.....	2.59
o-Toluic	.....	1.52	.....	1.32	.....	0.90
m-Toluic	.....	0.513	.....	0.560	.....	0.48
p-Toluic	.....	0.383	.....	0.433	.....	0.372
Cinnamic	.....	0.320	.....	0.367	.....	0.331
Hydrocinnamic	0.229	0.214	0.232	0.221	0.191	0.177
o-Phthalic	.....	13.4	.....	12.8	.....	10.2
Anisic	.....	0.303	.....	0.335	.....	0.331
Vanillic	.....	0.31	.....	0.35	.....	0.33
Naphthionic	.....	11.1	.....	21.2	.....	44.2
Mandelic	4.30	4.32	4.29	4.32	3.66	3.45
Camphoric	.....	0.282	.....	0.264	.....	0.201
Coumaric	.....	0.233	.....	0.268	.....	0.236

These "affinity constants" are of fundamental importance in dealing with organic acids. From these values we learn more about the organic acids as acids than from any other data. The constants are tabulated for convenience of reference, and a glance will give a very good idea of the relative activities of a fairly large number of very different types of the acids of carbon.

TEMPERATURE COEFFICIENTS IN CONDUCTIVITY UNITS.

The following tabulation of some of the results will aid in an examination of these values. The heading 0° means zero to the next temperature.

Acid.	0°		25° to 35°		50° to 65°	
	$v=32$	$v=1024$	$v=32$	$v=1024$	$v=32$	$v=1024$
Acetic	0.14	0.72	0.12	0.62	0.08	0.46
Dichloracetic	3.62	5.46	3.30	4.94	1.75	4.39
Trichloracetic	4.60	5.26	4.12	5.05	2.75	2.83
Cyanacetic	1.67	4.35	1.23	4.04	0.70	3.01
Phenylacetic	0.21	1.05	0.18	0.82	0.98	0.45
Propionic	0.12	0.61	0.10	0.51	0.05	0.28
α-Brompropionic	0.76	3.27	0.56	2.75	.....	.....
β-Iodopropionic	0.28	1.34	0.26	1.32	.....	.....
Acetylpropionic	0.16	0.81	0.14	0.71	0.095	0.44
n-Butyric	0.12	0.64	0.05	0.41	.....	.....
α-Brombutyric	0.79	3.25	0.54	2.62	.....	.....
Isobutyric	0.12	0.60	0.09	0.46	0.041	0.18
Hydroxyisobutyric	0.33	1.54	0.28	1.46	0.17	0.90
Isovaleric	0.113	0.589	0.87	0.415	0.45	0.175
Caprylic	.....	0.56	.....	0.45	.....	0.22
Malonic	1.17	4.06	1.03	3.36	0.53	.....
Dimethylmalonic	0.78	3.04	0.72	2.71	0.55	2.17
Ethylmalonic	0.95	3.42	0.81	2.88	0.54	2.18
Diethylmalonic	1.92	4.47	1.48	4.16	0.80	3.27
Methylethylmalonic	1.07	3.67	0.95	3.18	0.72	2.82
Isopropylmalonic	0.97	3.53	0.87	3.04	0.51	2.41
Dipropylmalonic	2.13	4.63	1.58	4.14	.....	3.40
Butylmalonic	0.87	3.15	0.78	2.97	0.53	2.26
Benzylmalonic	1.03	3.50	0.85	3.02	0.57	2.30
Allylmalonic	1.06	3.67	0.88	3.23	0.61	2.37

TEMPERATURE COEFFICIENTS IN CONDUCTIVITY UNITS—Continued.

Acid.	0°		25° to 35°		50° to 65°	
	$v=32$	$v=1024$	$v=32$	$v=1024$	$v=32$	$v=1024$
Succinic	0.28	1.41	0.24	1.16	0.18	1.03
Monobromsuccinic	.....	4.20	.....	.....	.....	.....
Dibromsuccinic	3.10	8.01	1.74	6.35	3.28	5.26
Pyrotartaric	0.29	1.43	0.27	1.27	0.29	.....
l-Tartaric	0.99	3.73	0.89	3.22	0.68	2.70
Racemic	1.02	3.73	0.95	3.43	0.62	2.21
Thiodiglycolic	0.70	2.94	0.59	2.48	0.39	1.94
Tricarballylic	0.47	2.12	0.44	2.06	0.33	1.22
Diphenylglycolic	.....	3.02	.....	2.87	.....	1.77
Hippuric	.....	2.06	.....	1.61	.....	1.13
Citric	0.91	3.64	0.87	3.38	0.75	4.35
Pyromucic	0.71	3.08	0.52	2.06	0.28	1.07
Crotonic	0.15	0.78	0.12	0.66	0.082	0.64
Maleic	2.74	5.14	2.34	4.67	1.80	4.20
Fumaric	0.94	3.62	1.78	3.00	0.50	2.05
Itaconic	0.40	1.81	0.35	1.65	0.29	1.40
Citraconic	1.43	2.24	1.21	3.74	0.91	3.24
Mesaconic	0.80	3.78	0.60	2.42	0.41	1.86
Phenylpropiolic	.....	4.44	.....	3.94	.....	2.00
Meconic	.....	10.06	4.86	9.18	3.32	8.59
Benzoic	.....	1.26	.....	1.06	.....	0.67
o-Chlorbenzoic	.....	3.13	.....	2.35	.....	1.13
o-Nitrobenzoic	1.49	4.36	0.84	3.51	0.153	2.22
m-Nitrobenzoic	.....	2.49	.....	2.16	.....	1.67
p-Nitrobenzoic	.....	2.63	.....	2.40	.....	1.33
1, 2, 4-Dinitrobenzoic	3.04	5.05	2.15	4.80	1.14	3.52
1, 3, 5-Dinitrobenzoic	.....	3.84	.....	3.59	.....	2.49
Picric	4.48	4.99	4.14	4.93	3.61	3.46
Salicylic	.....	3.80	.....	3.22	.....	2.37
Acetylsalicylic	.....	1.89	.....	1.94	.....	.....
Sulphosalicylic	4.95	8.04	4.56	7.57	3.59	5.62
m-Hydroxybenzoic	.....	1.44	.....	1.19	.....	0.77
p-Hydroxybenzoic	.....	0.90	.....	0.79	.....	0.49
1, 2, 4-Dihydroxybenzoic	.....	2.97	.....	2.64	.....	1.69
1, 2, 5-Dihydroxybenzoic	.....	3.95	.....	3.30	.....	.....
Gallic	.....	1.05	.....	0.87	.....	0.65
o-Aminobenzoic	.....	0.65	.....	0.81	.....	.....
m-Aminobenzoic	.....	0.60	.....	0.78	.....	.....
p-Aminobenzoic	.....	0.67	.....	0.62	.....	.....
Metanilic	0.53	2.50	0.81	3.23	1.10	3.82
Sulphanilic	0.88	3.45	1.30	3.88	1.48	4.37
Picramic	.....	1.41	.....	1.84	.....	2.30
p-Sulphaminobenzoic	.....	2.28	.....	2.02	.....	1.27
Benzenesulphonic	4.76	5.40	4.50	5.13	4.16	4.67
m-Nitrotoluenesulphonic	4.47	4.73	4.29	4.59	3.77	3.89
p-Toluenesulphonic	4.62	4.93	4.59	4.76	3.94	3.83
1, 2, 4-Nitrotoluenesulphonic	4.44	4.74	4.06	4.35	.....	.....
o-Toluic	.....	1.52	.....	1.00	.....	0.51
m-Toluic	.....	1.19	.....	0.98	.....	0.64
p-Toluic	.....	1.07	.....	0.94	.....	0.61
Cinnamic	.....	1.08	.....	0.84	.....	0.62
Hydrocinnamic	0.145	0.757	0.104	0.595	0.079	0.38
o-Phthalic	.....	3.51	.....	0.266	.....	2.44
4, 5-Dichlorphthalic	.....	5.65	.....	4.37	.....	2.93
Tetrachlorphthalic	.....	6.94	.....	5.93	.....	3.46
Anisic	.....	0.98	.....	0.85	.....	0.66
Vanillic	.....	0.95	.....	0.94	.....	0.60
Naphthionic	.....	4.70	.....	5.09	.....	4.56
Mandelic	0.56	2.43	0.51	2.13	0.35	1.55
Camphoric	.....	0.75	.....	0.59	.....	0.36
Coumaric	.....	0.97	.....	0.61	.....	0.49

The temperature coefficients of conductivity, expressed in conductivity units, increase rapidly with the dilution of the solution, and for weak organic acids, when not much hydrated, decrease rapidly with rise in temperature. When the acids are hydrated the temperature coefficients of conductivity are larger, and their increase with dilution and decrease with rise in temperature both take place at a slower rate.

The organic acids with the larger constants also have, in general, the larger temperature coefficients of conductivity expressed in conductivity units. The ortho acids usually have a somewhat larger coefficient than the meta and the para. The meta and the para have very nearly the same values for the temperature coefficients expressed in conductivity units.

TEMPERATURE COEFFICIENTS IN PER CENT.

The following coefficients in per cent were obtained; the heading 0° means from zero to next temperature.

Acid.	0°		25° to 35°		50° to 65°	
	$v=32$	$v=1024$	$v=32$	$v=1024$	$v=32$	$v=1024$
Acetic	2.62	2.57	1.39	1.32	0.72	0.79
Dichloracetic	2.18	2.46	1.30	1.37	0.52	0.90
Trichloracetic	2.20	2.35	1.28	1.42	0.65	0.59
Cyanacetic	2.29	2.32	1.16	1.39	0.52	0.79
Phenylacetic	2.32	2.30	1.23	1.15	0.55	0.51
Propionic	2.56	2.56	1.33	1.31	0.56	0.57
α-Brompropionic	2.00	2.16	1.00	1.17	.....	.....
β-Iodopropionic	2.25	2.28	1.35	1.45	.....	.....
Acetylpropionic	2.74	2.71	1.43	1.43	0.74	0.67
n-Butyric	2.38	2.38	1.19	0.98	.....	.....
α-Brombutyric	1.86	2.02	0.89	1.09	.....	.....
Isobutyric	2.35	2.28	1.17	1.13	0.46	0.39
Hydroxyisobutyric	2.71	2.62	1.38	1.50	0.65	0.70
Isovaleric	2.10	2.08	1.07	0.98	0.46	0.34
Caprylic	.....	2.29	.....	1.17	.....	0.46
Malonic	2.69	2.65	1.43	1.34	0.74	0.80
Dimethylmalonic	2.43	2.45	1.40	1.36	0.80	0.82
Ethylmalonic	2.33	2.32	1.27	1.25	0.66	0.71
Diethylmalonic	2.07	2.22	1.06	1.33	0.46	0.79
Methylethylmalonic	2.33	2.35	1.31	1.28	0.76	0.87
Isopropylmalonic	2.43	2.45	1.34	1.30	0.61	0.78
Dipropylmalonic	2.06	2.27	1.02	1.30	.....	0.81
Butylmalonic	2.32	2.25	1.32	1.36	0.69	0.79
Benzylmalonic	2.29	2.29	1.22	1.26	0.65	0.74
Allylmalonic	2.33	2.31	1.23	1.30	0.16	0.73
Succinic	2.03	2.94	1.47	1.42	0.84	0.94
Monobromsuccinic	.....	2.22	.....	.....	.....	.....
Dibromsuccinic	1.77	2.10	0.71	1.11	1.09	0.74
Pyrotartaric	2.64	2.63	1.47	1.42	0.79	.....
l-Tartaric	2.94	2.75	1.52	1.40	0.84	0.88
Racemic	2.93	2.68	1.59	1.49	0.80	0.73
Thiodiglycolic	2.43	2.45	1.28	1.30	0.64	0.78
Tricarballylic	2.86	2.68	1.56	1.57	0.88	0.68
Diphenylglycolic	.....	2.26	.....	1.23	.....	0.66
Hippuric	.....	2.54	.....	1.23	.....	0.66
Citric	3.00	2.86	1.64	1.55	0.98	0.95
Pyromucic	2.08	2.31	1.04	1.02	0.45	0.43
Crotonic	2.69	2.68	1.31	1.37	0.68	0.73
Maleic	2.54	2.43	1.34	1.38	0.78	0.93
Fumaric	2.64	2.56	1.19	1.17	0.67	0.70
Itaconic	2.97	2.71	1.50	1.45	0.90	0.91
Citraconic	2.08	2.28	1.18	1.29	0.70	0.84
Mesaconic	2.39	2.37	1.16	1.15	0.67	0.68

Acid.	0°		25° to 35°		50° to 65°	
	$v=32$	$v=1024$	$v=32$	$v=1024$	$v=32$	$v=1024$
Phenylpropiolic	.....	2.32	.....	1.31	.....	0.51
Meconic	.....	2.36	1.18	1.34	0.63	0.96
Benzoic	.....	2.64	.....	1.35	.....	0.65
o-Chlorbenzoic	.....	1.97	.....	1.01	.....	0.40
o-Nitrobenzoic	1.52	2.22	0.59	1.16	0.11	0.55
m-Nitrobenzoic	.....	2.69	.....	1.40	.....	0.78
p-Nitrobenzoic	.....	2.63	.....	1.47	.....	0.61
1, 2, 4-Dinitrobenzoic	1.83	2.31	0.90	1.40	0.40	0.77
1, 3, 5-Dinitrobenzoic	.....	2.60	.....	1.47	.....	0.76
Picric	2.32	2.41	1.36	1.48	0.90	0.75
Salicylic	.....	2.91	.....	1.41	.....	0.79
Acetylsalicylic	.....	2.04	.....	1.39	.....	1.06
Sulphosalicylic	2.36	2.49	1.37	1.44	0.83	0.81
m-Hydroxybenzoic	.....	2.71	.....	1.36	.....	0.66
p-Hydroxybenzoic	.....	2.72	.....	1.44	.....	0.67
1, 2, 4-Dihydroxybenzoic	.....	2.87	.....	1.46	.....	0.70
1, 2, 5-Dihydroxybenzoic	.....	2.79	.....	1.41	.....	.....
Gallic	.....	2.76	.....	1.39	.....	0.76
o-Aminobenzoic	.....	4.03	.....	2.40	.....	.....
m-Aminobenzoic	.....	5.11	.....	2.81	.....	.....
p-Aminobenzoic	.....	3.57	.....	1.79	.....	.....
Metanilic	4.61	2.30	3.02	2.63	2.23	1.81
Sulphanilic	4.03	3.57	2.68	2.12	1.89	1.52
Picramic	.....	4.30	.....	2.58	.....	1.93
p-Sulphaminobenzoic	.....	2.52	.....	1.21	.....	0.67
Benzenesulphonic	2.27	2.37	1.33	1.43	0.92	0.98
m-Nitrobenzenesulphonic	2.28	2.31	1.40	1.42	0.92	0.90
p-Toluenesulphonic	2.28	2.34	1.45	1.43	0.92	0.86
1, 2, 4-Nitrotoluenesulphonic	2.30	2.37	1.34	1.37	.....	.....
o-Toluic	.....	2.11	.....	0.94	.....	0.40
m-Toluic	.....	2.62	.....	1.32	.....	0.65
p-Toluic	.....	2.76	.....	1.42	.....	0.70
Cinnamic	.....	2.96	.....	1.37	.....	0.77
Hydrocinnamic	2.47	2.49	1.24	1.22	0.67	0.61
o-Phthalic	.....	2.37	.....	1.15	.....	0.81
4, 5-Dichlorphthalic	.....	2.14	.....	1.10	.....	0.59
Tetrachlorphthalic	.....	2.11	.....	1.20	.....	0.56
Anisic	.....	2.74	.....	1.43	.....	0.82
Vanillic	.....	2.63	.....	1.58	.....	0.75
Naphthionic	.....	3.30	.....	1.94	.....	1.19
Mandelic	2.29	2.30	1.31	1.27	0.71	0.72
Camphoric	.....	2.20	.....	1.13	.....	0.56
Coumaric	.....	3.07	.....	1.15	.....	0.70

The temperature coefficients of conductivity, expressed in conductivity units, are, for the same volume and temperature, of the same order of magnitude. Take $v=32$, and at 0° these coefficients range in general from 2.2 to 2.7. There are a few comparatively wide discrepancies. Thus α=brombutyric, dibromsuccinic, *o*-nitrobenzoic, and 1, 2, 4 dinitrobenzoic have percentage coefficients that are much lower than 2.2; while citric, coumaric, and especially metanilic and sulphanilic, have coefficients much larger than 2.7. That the relation pointed out above holds in general will be seen from the results. It will also be noted that the temperature coefficients in "per cent" decrease with rise in temperature.

The results recorded in this monograph are for 200 of the most frequently used salts and organic acids. Work along this same line is being continued in this laboratory. It is intended to include in this investigation a much larger number of salts, organic acids, the strong mineral acids and bases, and the organic bases in water and nonaqueous and mixed solvents.

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